CANADIAN JOURNAL OF MICROBIOLOGY

JOURNAL CANADIEN DE MICROBIOLOGIE

VOLUME 30, 1984

Author Index / Index des Auteurs

Ackermann, H.-W.
Morphology of *Pasteurella multocida* bacteriophages
H.-W. Ackermann and L. Karaivanov 1141

Ackroyd, D.
Influence of soil microorganisms on the trapping of nematodes by nematophagous fungi
W.D. Rosenzweig and D. Ackroyd 1437

Acres, S.D.
Morphological examination of cell surface structures of enterotoxigenic strains of *Escherichia coli*
R. Chan, S.D. Acres, and J.W. Costerton 451

Adegbola, A.A.
Hydrolysis of linamarin by intestinal bacteria
R.T. Fomunyam, A.A. Adegbola, and O.L. Oke 1530

Agnew, B.J.
Death rates of obligate anaerobes exposed to oxygen and the effect of media prereduction on cell viability
G.B. Patel, L.A. Roth, and B.J. Agnew 228

Ahmed, Z.U.
Excretion of α-keto acids by strains of *Streptomyces venezuelae*
Zia U. Ahmed, S. Shapiro, and L.C. Vining 1014

Albright, L.J.
The effects of the insecticide acephate on the growth and nutrient uptake of an aquatic bacterium
G.L. Williams and L.J. Albright 375

Alexander, M.
Temperature and desiccation tolerance of cowpea rhizobia
Peter G. Hartel and Martin Alexander 820

Ali, H.
Rhizobium meliloti Tn*5* induced auxotrophic mutants responding to different biosynthetic intermediates
Hassan Ali, Max Béchet, Christian Niel, and Jean-Bernard Guillaume 507

Alvarez, M.E.
Glutamine synthetase from *Mycobacterium avium*
Maria E. Alvarez and C.M. McCarthy 353

Anderson, J.
The nucleotide sequence homologies of unique DNA's of some cultivated and wild mushrooms
Paul A. Horgen, Richard Arthur, Olia Davy, Ann Moum, Frank Herr, Neil Straus, and James Anderson 587

Anderson, J.F.
Antibodies to *Rickettsia rickettsii* in *Peromyscus leucopus* from a focus of Rocky Mountain spotted fever in Connecticut
Louis A. Magnarelli, John F. Anderson, Willy Burgdorfer, Robert N. Philip, and W. Adrian Chappell 491

Archibald, F.S.
Sulphur acquisition by *Neisseria meningitidis*
J.L. Port, I.W. DeVoe, and F.S. Archibald 1453

Archibald, R.D.
The derivation and use of mice which do not harbour lactobacilli in the gastrointestinal tract
G.W. Tannock and R.D. Archibald 849

Armstrong, R.L.
Protein synthesis in germinating *Saccharomyces cerevisiae* ascospores
Robert L. Armstrong, Thomas P. West, and Paul T. Magee 345

Arthur, R.
The nucleotide sequence homologies of unique DNA's of some cultivated and wild mushrooms
Paul A. Horgen, Richard Arthur, Olia Davy, Ann Moum, Frank Herr, Neil Straus, and James Anderson 587

Ashton, F.E.
Serotype distribution of meningococci isolated in South Australia 1971 through 1980
F.E. Ashton, A. Ryan, B.B. Diena, and D. Hansman 1289

Atherly, A.G.
Spheroplasts of *Rhizobium japonicum*
James O. Berry and Alan G. Atherly 415

Austin-Prather, S.L.
Evidence for a membrane-bound form of a bacteriocin of *Bacteroides uniformis* TI-1
Sandra L. Austin-Prather and S. James Booth 268

Avissar, Y.J.
The expression of nitrate reductase in free-living *Rhizobium* sp.
Rachel Gollop and Yael J. Avissar 890

Ayache, R.
Erratum: A survey of enteric viruses in domestic sewage
Pierre Payment, Reda Ayache, and Michel Trudel 272

Backhouse, D.
A histochemical study of sclerotia of *Botrytis cinerea* and *Botrytis fabae*
D. Backhouse and H.J. Willetts 171

Baek, L.J.
Positive serological evidence that Hantaan virus, the etiologic agent of hemorrhagic fever with renal syndrome, is endemic in Canada
Ho Wang Lee, In Wha Seong, Luck Ju Baek, Donald A. McLeod, Jeong Sun Seo, and C. Yong Kang 1137

Baharaeen, S.
25S ribosomal RNA homologies of basidiomycetous yeasts: taxonomic and phylogenetic implications
Siavash Baharaeen and Helen S. Vishniac 613

Erratum: Complementary DNA – 25S ribosomal RNA hybridization: an improved method for phylogenetic studies
Siavash Baharaeen, Ulrich Melcher, and Helen S. Vishniac 719

Baker, J.H.
Factors affecting the bacterial colonization of various surfaces in a river
J.H. Baker 511

Baker, R.
Effect of synthetic iron chelates on population densities of *Fusarium oxysporum* and the biological control agent *Pseudomonas putida* in soil
F.M. Scher, M. Dupler, and R. Baker 1271

Hyphal interactions between a mycoparasite, *Pythium nunn*, and several soil fungi
R. Lifshitz, M. Dupler, Y. Elad, and R. Baker 1482

Bal, A.K.
Resting sporangium of *Synchytrium endobioticum*: partial characterization of the cell wall protein
T.R. Patel, A.K. Bal, and M.C. Hampson 1295

Bardin, R.
An improved method for lysis of *Frankia* with achromopeptidase allows detection of new plasmids
Pascal Simonet, Andre Capellano, Elisabeth Navarro, Rene Bardin, and Andre Moiroud 1292

Baron, E.J.
Inefficient *in vitro* killing of virulent or nonvirulent *Salmonella typhimurium* by murine polymorphonuclear neutrophils
Ellen Jo Baron and Richard A. Proctor 1264

Barreto da Silva, M.S.
Mycoflora of the human dermal surfaces
W.Y. Mok and M.S. Barreto da Silva 1205

Baumann, E.
The distribution of large T antigen in simian virus 40 nucleoprotein complexes
Peter Milthorp, Ernst Baumann, and Roger Hand 622

Bayardelle, P.
Rapid screening for bacteriuria with a laser nephelometer
Paul Bayardelle and Hervé Richet 927

Beaudet, R.
Preliminary characterization of inhibitors of *Neisseria gonorrhoeae* produced *in vitro* by *Eubacterium limosum*
A. Morin, J.-G. Bisaillon, R. Beaudet, M. Sylvestre, S.A. Saheb, and D. Leduc 251

Béchet, M.
Rhizobium meliloti Tn*5* induced auxotrophic mutants responding to different biosynthetic intermediates
Hassan Ali, Max Béchet, Christian Niel, and Jean-Bernard Guillaume 507

Beckers, H.J.
Evaluation of a pour-plate system with a rabbit plasma – bovine fibrinogen agar for the enumeration of *Staphylococcus aureus* in food
H.J. Beckers, F.M. Van Leusden, O. Bindschedler, and D. Guerraz 470

Begbie, R.
Polyacrylamide gel electrophoresis of *Bacteroides succinogenes*
R. Begbie and C.S. Stewart 863

Behie, L.A.
An assay for the measurement of the protein content of cells immobilized in carrageenan
A. Jones, T. Razniewska, B.H. Lesser, R. Siqueira, D. Berk, L.A. Behie, and G.M. Gaucher 475

Bellei, M.M.
Control of white rot of garlic by antagonistic fungi under controlled environmental conditions
Vetúria L. de Oliveira, Margarida de M. Bellei, and Arnaldo Chaer Borges 884

Belyaeva, N.N.
Bacillus mycoides phages and their satellites
Anna S. Tikhonenko, Nina N. Belyaeva, and Anna F. Kretova 691

Bengis-Garber, C.
The effect of salt concentration on the phospholipid and fatty acid composition of the moderate halophile *Vibrio costicola*
Kim Hanna, Carmela Bengis-Garber, D.J. Kushner, Margot Kogut, and Morris Kates 669

Benny, U.K.
Adsorption of tumorigenic *Agrobacterium tumefaciens* cells to susceptible potato tuber tissues
Steven G. Pueppke and Ulla K. Benny 1030

Benson, D.M.
Improved enumeration of *Trichoderma* spp. on dilution plates of selective media containing a nonionic surfactant
D.M. Benson 1193

Berk, D.
An assay for the measurement of the protein content of cells immobilized in carrageenan
A. Jones, T. Razniewska, B.H. Lesser, R. Siqueira, D. Berk, L.A. Behie, and G.M. Gaucher 475

Bernard, F.
Difference in the extracellular products of two strains of *Aeromonas hydrophila* virulent and weakly virulent for fish
R. Lallier, F. Bernard, and G. Lalonde 900

Bernard, T.
Osmoregulation in *Klebsiella pneumoniae:* enhancement of anaerobic growth and nitrogen fixation under stress by proline betaine, γ-butyrobetaine, and other related compounds
Daniel Le Rudulier, Theophile Bernard, Gabrielle Goas, and Jack Hamelin 299

Berry, J.O.
Spheroplasts of *Rhizobium japonicum*
James O. Berry and Alan G. Atherly 415

Beveridge, T.
Septation in *Zymomonas mobilis*
T. Beveridge, R. Harris, J. Fein, H. Lawford, and G.R. Lawford 1283

Beveridge, T.J.
Metal binding by the peptidoglycan sacculus of *Escherichia coli* K-12
B.D. Hoyle and T.J. Beveridge 204

Structure and cell envelope associations of flagellar basal complexes of *Vibrio cholerae* and *Campylobacter fetus*
F.G. Ferris, T.J. Beveridge, M.L. Marceau-Day, and A.D. Larson 322

Methanogenesis in the absence of intracytoplasmic membranes
G.D. Sprott, L.C. Sowden, J.R. Colvin, K.F. Jarrell, and T.J. Beveridge 594

Erratum: Structure and cell envelope associations of flagellar basal complexes of *Vibrio cholerae* and *Campylobacter fetus*
F.G. Ferris, T.J. Beveridge, M.L. Marceau-Day, and A.D. Larson 1092

Bewley, R.J.F.
Effects of sulphur dioxide pollution on forest soil microorganisms
R.J.F. Bewley and D. Parkinson 179

Bilinski, C.A.
Temperature regulation of nuclear division in apomictic yeast
Carl A. Bilinski and John J. Miller 793

Bilous, D.
Purification and characterization of an exoglucanase from *Streptomyces flavogriseus*
C.R. MacKenzie, D. Bilous, and K.G. Johnson 1171

Bindschedler, O.
Evaluation of a pour-plate system with a rabbit plasma – bovine fibrinogen agar for the enumeration of *Staphylococcus aureus* in food
H.J. Beckers, F.M. Van Leusden, O. Bindschedler, and D. Guerraz 470

Bisaillon, J.-G.
Preliminary characterization of inhibitors of *Neisseria gonorrhoeae* produced *in vitro* by *Eubacterium limosum*
A. Morin, J.-G. Bisaillon, R. Beaudet, M. Sylvestre, S.A. Saheb, and D. Leduc 251

Blaskovic, P.
Virological examination of drinking water: a Canadian collaborative study
Pierre Payment, Michel Trudel, S.A. Sattar, V.S. Springthorpe, T.P. Subrahmanyan, B.E. Gregory, A.H. Vajdic, P. Blaskovic, I.J. Guglielmi, and O. Kudrewko 105

Bloom, J.R.
The effect of free-living nematodes and compost moisture on growth and yield in *Agaricus brunnescens*
T.D. Kaufman, F.L. Lukezic, and J.R. Bloom 503

Bogulska, M.
Characterization of anti-*Citrobacter* 036 specific polysaccharide monoclonal antibodies
P.J. Shearman, D.R. Bundle, E. Romanowska, C. Lugowski, and M. Bogulska 91

Bogusz, D.
Isolation and characterization of two bacteriophages of a stem-nodulating *Rhizobium* strain from *Sesbania rostrata*
Philippe de Lajudie and Didier Bogusz 521

Boissinot, M.
Ecological distribution of *Legionellaceae* in the Quebec city area
Jean R. Joly, Maurice Boissinot, Jean Duchaine, Marie Duval, Jamel Rafrafi, Danielle Ramsay, and Robert Letarte 63

Booth, S.J.
Evidence for a membrane-bound form of a bacteriocin of *Bacteroides uniformis* TI-1
Sandra L. Austin-Prather and S. James Booth 268

Borges, A.C.
Control of white rot of garlic by antagonistic fungi under controlled environmental conditions
Vetúria L. de Oliveira, Margarida de M. Bellei, and Arnaldo Chaer Borges 884

Bourgeau, G.
Properties of oral asaccharolytic black-pigmented *Bacteroides*
D. Mayrand, G. Bourgeau, D. Grenier, and J.-M. Lacroix 1133

Boyaval, P.
Le transport de la phénylalanine et de la tyrosine chez *Brevibacterium linens*: spécificité et incorporation dans les protéines
P. Boyaval, Evelyne Moreira et M.J. Desmazeaud 430

Bozzola, J.J.
The effect of aculeacin A and papulacandin B on morphology and cell wall ultrastructure in *Candida albicans*
J.J. Bozzola, R.J. Mehta, L.J. Nisbet, and J.R. Valenta 857

Bradley, D.E.
Flagella-specific bacteriophages of *Agrobacterium tumefaciens*: demonstration of virulence of nonmotile mutants
David E. Bradley, Carl J. Douglas, and Jacques Peschon 676

Braude, A.I.
Specific cross-protective antigonococcal immunity in the murine genital tract
L.B. Corbeil, A.C. Wunderlich, J.M. Lyons, and A.I. Braude 482

Breeze, A.S.
The effects of chlorate- and streptomycin-resistance mutations on nitrofurantoin resistance in *Escherichia coli* K-12
EMMANUEL E. OBASEIKI-EBOR and ANTHONY S. BREEZE **1448**

Brewer, D.
The antibacterial activity of some naturally occurring 2,5-dihydroxy-1,4-benzoquinones
D. BREWER, W.-C. JEN, G.A. JONES, and A. TAYLOR **1068**

Bromfield, E.S.P.
The preference for strains of *Rhizobium meliloti* by cultivars of *Medicago sativa* grown on agar
E.S.P. BROMFIELD **1179**

Brook, I.
In vivo protection of penicillin-susceptible *Bacteroides melaninogenicus* from penicillin by facultative bacteria which produce beta-lactamase
ITZHAK BROOK, GARRY PAZZAGLIA, JAMES C. COOLBAUGH, and RICHARD I. WALKER **98**

Brooks, R.W.
Recovery and survival of nontuberculous mycobacteria under various growth and decontamination conditions
ROBERT W. BROOKS, KAREN L. GEORGE, BRUCE C. PARKER, JOSEPH O. FALKINHAM III, and HOWARD GRUFT **1112**

Bryan, L.E.
Interaction of *Clostridium difficile* toxin A with L cells in culture
M.S. SHAHRABADI, L.E. BRYAN, and P.W.K. LEE **874**

Lipopolysaccharide composition of three strains of *Haemophilus influenzae*
THOMAS R. PARR, JR. and L.E. BRYAN **1184**

Bryant, R.D.
The role of *Thiobacillus albertis* glycocalyx in the adhesion of cells to elemental sulfur
R.D. BRYANT, J.W. COSTERTON, and E.J. LAISHLEY **81**

Bugbee, W.M.
Partial purification and properties of an invertase from *Pseudomonas fluorescens*
W.M. BUGBEE **1326**

Bundle, D.R.
Characterization of anti-*Citrobacter* 036 specific polysaccharide monoclonal antibodies
P.J. SHEARMAN, D.R. BUNDLE, E. ROMANOWSKA, C. LUGOWSKI, and M. BOGULSKA **91**

Burgdorfer, W.
Antibodies to *Rickettsia rickettsii* in *Peromyscus leucopus* from a focus of Rocky Mountain spotted fever in Connecticut
LOUIS A. MAGNARELLI, JOHN F. ANDERSON, WILLY BURGDORFER, ROBERT N. PHILIP, and W. ADRIAN CHAPPELL **491**

Calcott, K.N.
Involvement of outer membrane proteins in freeze–thaw resistance of *Escherichia coli*
PETER H. CALCOTT and KATHERINE N. CALCOTT **339**

Calcott, P.H.
Involvement of outer membrane proteins in freeze–thaw resistance of *Escherichia coli*
PETER H. CALCOTT and KATHERINE N. CALCOTT **339**

Calderone, R.A.
In vitro binding of *Candida albicans* yeast cells to human fibronectin
KATHERINE G. SKERL, RICHARD A. CALDERONE, ESTHER SEGAL, T. SREEVALSAN, and W. MICHAEL SCHELD **221**

Adherence of *Candida albicans* to buccal and vaginal epithelial cells: ultrastructural observations
RICHARD A. CALDERONE, NURITH LEHRER, and ESTHER SEGAL **1001**

Campione-Piccardo, J.
Reversion of mutations in the thymidine kinase gene in herpes simplex viruses resistant to phosphonoacetate
J. CAMPIONE-PICCARDO and W.E. RAWLS **560**

Capellano, A.
An improved method for lysis of *Frankia* with achromopeptidase allows detection of new plasmids
PASCAL SIMONET, ANDRE CAPELLANO, ELISABETH NAVARRO, RENE BARDIN, and ANDRE MOIROUD **1292**

Carvalho, M.E.
A turbidimetric and electron microscopic study of the effects of several parameters on the lysis of *Streptococcus faecalis* by lysozyme
M. EGÍDIA CARVALHO, M. HELENA GONÇALVES, and M.T. SILVA **905**

Casida, L.E., Jr.
A growth initiation factor involved in magnesium utilization by certain soil bacteria
L.E. CASIDA, JR. **824**

Caumette, P.
Distribution and characterization of phototrophic bacteria isolated from the water of Bietri Bay (Ebrie Lagoon, Ivory Coast)
PIERRE CAUMETTE **273**

Chadwick, J.M.
Physical factors influencing the growth of protoplasts of *Entomophaga grylli*
GARY B. DUNPHY and JUNE M. CHADWICK **1315**

Chaffin, W.L.
The relationship between yeast cell size and cell division in *Candida albicans*
W. LAJEAN CHAFFIN **192**

Chakraborty, U.
Role of rhizobitoxine in protecting soybean roots from *Macrophomina phaseolina* infection
USHA CHAKRABORTY and R.P. PURKAYASTHA **285**

Champlin, F.R.
Chemical alterations in cell envelopes of *Pseudomonas aeruginosa* upon exposure to polymyxin: a possible mechanism to explain adaptive resistance to polymyxin
H.E. GILLELAND, JR., F.R. CHAMPLIN, and ROBERT S. CONRAD **869**

Chan, M.K.-H.
Conversion of pretreated lignocellulosic substrates to ethanol by *Clostridium thermocellum* in mono- and co-culture with *Clostridium thermosaccharolyticum* and *Clostridium thermohydrosulphuricum*
J.N. SADDLER and M.K.-H. CHAN **212**

Chan, R.
Morphological examination of cell surface structures of enterotoxigenic strains of *Escherichia coli*
R. Chan, S.D. Acres, and J.W. Costerton 451

Chappell, W.A.
Antibodies to *Rickettsia rickettsii* in *Peromyscus leucopus* from a focus of Rocky Mountain spotted fever in Connecticut
Louis A. Magnarelli, John F. Anderson, Willy Burgdorfer, Robert N. Philip, and W. Adrian Chappell 491

Charles, A.M.
Pyruvate carboxylase from *Thiobacillus novellus*: properties and possible function
A.M. Charles and D.W. Willer 532

Chart, H.
Characterization of the surface antigens of the marine fish pathogens *Vibrio anguillarum* and *Vibrio ordalii*
Henrik Chart and Trevor J. Trust 703

Erratum: Characterization of the surface antigens of the marine fish pathogens *Vibrio anguillarum* and *Vibrio ordalii*
Henrik Chart and Trevor J. Trust 1195

Chernykh, S.I.
Isolation of nonlysogenic bacteria from λ-lysogenized strains using antibiotic-resistant phage
V.A. Kordyum, S.I. Chernykh, and I.Y. Medvedeva 74

Clara, R.W.
Superoxide dismutase, catalase, and peroxidase in ammonium-grown and nitrogen-fixing *Azospirillum brasilense*
Richard W. Clara and Roger Knowles 1222

Cole, G.
Composition chimique et ultrastructure des parois des corps hyphaux et des azygospores de *Conidiobolus obscurus*
J.P. Latgé, B. Fournet, G. Cole, D. Dubourdieu et N. Tong 1507

Colotelo, N.
Rhizomorph exudate of *Armillaria mellea*
K.I. Mallett and Nicholas Colotelo 1247

Colvin, J.R.
Methanogenesis in the absence of intracytoplasmic membranes
G.D. Sprott, L.C. Sowden, J.R. Colvin, K.F. Jarrell, and T.J. Beveridge 594

Colwell, R.R.
Viable but nonrecoverable stage of *Salmonella enteritidis* in aquatic systems
D.B. Roszak, D.J. Grimes, and R.R. Colwell 334

Conrad, R.S.
Chemical alterations in cell envelopes of *Pseudomonas aeruginosa* upon exposure to polymyxin: a possible mechanism to explain adaptive resistance to polymyxin
H.E. Gilleland, Jr., F.R. Champlin, and Robert S. Conrad 869

Conter, P.F.
Induction and repression of L-fucose dehydrogenase of *Pullularia pullulans*
P.F. Conter, M.F. Guimarães, and L.A. Veiga 753

Coolbaugh, J.C.
In vivo protection of penicillin-susceptible *Bacteroides melaninogenicus* from penicillin by facultative bacteria which produce beta-lactamase
Itzhak Brook, Garry Pazzaglia, James C. Coolbaugh, and Richard I. Walker 98

Cooper, J.K.
Membrane enzymes associated with the dissimilation of some citric acid cycle substrates and production of extracellular oxidation products in chemostat cultures of *Pseudomonas fluorescens*
Woo S. Lee, John K. Cooper, and William H. Lynch 396

Coppola, K.M.
Relationship between group JK corynebacteria and the biotypes of *Corynebacterium genitalium* and *Corynebacterium pseudogenitalium*
Alan T. Evangelista, Karen M. Coppola, and Geoffrey Furness 1052

Corbeil, L.B.
Specific cross-protective antigonococcal immunity in the murine genital tract
L.B. Corbeil, A.C. Wunderlich, J.M. Lyons, and A.I. Braude 482

Cornell, B.A.
Differential scanning calorimetry of membranes isolated from *Bacillus megaterium* spores
J.C. Vary, J.F. Skomurski, and B.A. Cornell 854

Costerton, J.W.
The role of *Thiobacillus albertis* glycocalyx in the adhesion of cells to elemental sulfur
R.D. Bryant, J.W. Costerton, and E.J. Laishley 81

Morphological examination of cell surface structures of enterotoxigenic strains of *Escherichia coli*
R. Chan, S.D. Acres, and J.W. Costerton 451

Morphological stabilization of the glycocalyces of 23 strains of five *Bacteroides* species using specific antisera
Dwight W. Lambe, Jr., K.J. Mayberry-Carson, Kaethe P. Ferguson, and J. William Costerton 809

Crabtree, S.
Degradation of lignocellulose in wheat straw versus hardwood by *Cyathus* and related species (Nidulariaceae)
D.T. Wicklow, R. Langie, S. Crabtree, and R.W. Detroy 632

Crameri, R.
Tyrosinase activity in *Streptomyces glaucescens* is controlled by three chromosomal loci
Reto Crameri, Gilberto Hintermann, Ralf Hütter, and Tobias Kieser 1058

Cronin, S.E.
Electron transport in *Paracoccus halodenitrificans* and the role of *Ubiquinone*
Lawrence I. Hochstein and Sonja E. Cronin 572

Dahling, D.R.
Comparison of commercial beef extracts and similar materials for recovering viruses from environmental samples
Christon J. Hurst, Daniel R. Dahling, Robert S. Safferman, and Tamara Goyke 1253

Danos, S.C.
Quantitative changes in fungal colony-forming units in the surface microlayers of two freshwater ponds
J.S. Maki, S.C. Danos, and C.C Remsen 578

Darbord, J.C.
Étude comparative de la transformation et de la fusion induite par les polyéthyléneglycols chez *Acholeplasma laidlawii* B
J.L. Goulay, J.C. Darbord et A. Desvignes 40

Das, A.
Erratum: Utilization of fructose by *Azospirillum brasilense*
Amaresh Das and Ajit K. Mishra 867

Davy, O.
The nucleotide sequence homologies of unique DNA's of some cultivated and wild mushrooms
Paul A. Horgen, Richard Arthur, Olia Davy, Ann Moum, Frank Herr, Neil Straus, and James Anderson 587

de Lajudie, P.
Isolation and characterization of two bacteriophages of a stem-nodulating *Rhizobium* strain from *Sesbania rostrata*
Philippe de Lajudie and Didier Bogusz 521

DeLucca, A.J., II
Lectin grouping of *Bacillus thuringiensis* serovars
Anthony J. DeLucca II 1100

de Oliveira, V.L.
Control of white rot of garlic by antagonistic fungi under controlled environmental conditions
Vetúria L. de Oliveira, Margarida de M. Bellei, and Arnaldo Chaer Borges 884

Denis, F.
Essai de mise en évidence d'une activité protéolytique d'origine intracellulaire chez *Aeromonas hydrophila LP 50*
Françoise Denis et Louise Veillet-Poncet 1190

Desmazeaud, M.J.
Le transport de la phénylalanine et de la tyrosine chez *Brevibacterium linens*: spécificité et incorporation dans les protéines
P. Boyaval, Evelyne Moreira et M.J. Desmazeaud 430

Desvignes, A.
Étude comparative de la transformation et de la fusion induite par les polyéthyléneglycols chez *Acholeplasma laidlawii* B
J.L. Goulay, J.C. Darbord et A. Desvignes 40

Detroy, R.W.
Degradation of lignocellulose in wheat straw versus hardwood by *Cyathus* and related species (Nidulariaceae)
D.T. Wicklow, R. Langie, S. Crabtree, and R.W. Detroy 632

DeVoe, I.W.
Sulphur acquisition by *Neisseria meningitidis*
J.L. Port, I.W. DeVoe, and F.S. Archibald 1453

Diena, B.B.
Serotype distribution of meningococci isolated in South Australia 1971 through 1980
F.E. Ashton, A. Ryan, B.B. Diena, and D. Hansman 1289

Dillon, J.R.
Growth inhibition of *Neisseria gonorrhoeae* isolates by L-phenylalanine and its analogues in defined media
A.T. Hendry and J.R. Dillon 1319

Ditzelmüller, G.
Xylose metabolism in *Pachysolen tannophilus:* purification and properties of xylose reductase
Günther Ditzelmüller, Christian P. Kubicek, Wilfried Wöhrer, and Max Röhr 1330

Długoński, J.
Protoplast release from fungi capable of steroid transformation
J. Długoński, L. Sedlaczek, and A. Jaworski 57

Domínguez, A.
The growth characteristics of *Saccharomycopsis lipolytica*: morphology and induction of mycelium formation
Carmina Rodríguez and Angel Domínguez 605

Douglas, C.J.
Flagella-specific bacteriophages of *Agrobacterium tumefaciens*: demonstration of virulence of nonmotile mutants
David E. Bradley, Carl J. Douglas, and Jacques Peschon 676

Dowhanick, T.M.
Effects of pretreatments with sulfhydryls and alkylating agents on spheroplast formation from *Schwanniomyces* species
T.M. Dowhanick, C.J. Panchal, and G.G. Stewart 368

Doyle, R.J.
Glucosamine substitution and muramidase susceptibility in *Bacillus anthracis*
Gene F. Zipperle, Jr., John W. Ezzell, Jr., and Ronald J. Doyle 553

DuBois, J.D.
Polyphosphate body and acid phosphatase localization in *Nostoc* sp.
John D. DuBois, Keith R. Roberts, and Lawrence A. Kapustka 8

Dubourdieu, D.
Composition chimique et ultrastructure des parois des corps hyphaux et des azygospores de *Conidiobolus obscurus*
J.P. Latgé, B. Fournet, G. Cole, D. Dubourdieu et N. Tong 1507

Duchaine, J.
Ecological distribution of *Legionellaceae* in the Quebec city area
Jean R. Joly, Maurice Boissinot, Jean Duchaine, Marie Duval, Jamel Rafrafi, Danielle Ramsay, and Robert Letarte 63

Dunn, M.T.
Genetics of fungicide resistance in *Talaromyces flavus*
Talma Katan, M.T. Dunn, and G.C. Papavizas 1079

Dunphy, G.B.
Physical factors influencing the growth of protoplasts of *Entomophaga grylli*
Gary B. Dunphy and June M. Chadwick 1315

Dupler, M.
Effect of synthetic iron chelates on population densities of *Fusarium oxysporum* and the biological control agent *Pseudomonas putida* in soil
F.M. Scher, M. Dupler, and R. Baker 1271

Hyphal interactions between a mycoparasite, *Pythium nunn*, and several soil fungi
R. Lifshitz, M. Dupler, Y. Elad, and R. Baker 1482

Duval, M.
Ecological distribution of *Legionellaceae* in the Quebec city area
Jean R. Joly, Maurice Boissinot, Jean Duchaine, Marie Duval, Jamel Rafrafi, Danielle Ramsay, and Robert Letarte 63

Easterbrook, K.B.
Conical spinae associated with a picoplanktonic procaryote
K.B. Easterbrook and D.V. Subba Rao 716

Elad, Y.
Hyphal interactions between a mycoparasite, *Pythium nunn*, and several soil fungi
R. Lifshitz, M. Dupler, Y. Elad, and R. Baker 1482

El-Banna, A.A.
Adaptational changes in *Staphylococcus aureus* MF31 grown above its maximum temperature when protected by NaCl: physiological studies
A. Hurst, Esther Ofori, A.A. El-Banna, and J. Harwig 1105

Emyanitoff, R.G.
Morphogenesis of arthroconidiation in the dermatophyte *Trichophyton mentagrophytes* with special reference to wall ontogeny
Tadayo Hashimoto, R.G. Emyanitoff, R.C. Mock, and J.H. Pollack 1415

Entis, P.
Growth of yeast and mold on trypan blue agar in conjunction with the ISO-GRID system
C.C. Sheree Lin, Daniel Y.C. Fung, and Phyllis Entis 1405

Eribo, B.E.
Extracellular enzyme production by *Rhizopus* and *Mucor* species on solid media
D.P. Thompson and Broderick E. Eribo 126

Evangelista, A.T.
Relationship between group JK corynebacteria and the biotypes of *Corynebacterium genitalium* and *Corynebacterium pseudogenitalium*
Alan T. Evangelista, Karen M. Coppola, and Geoffrey Furness 1052

Evanylo, L.P.
Siderophore production by *Proteus mirabilis*
Lisa P. Evanylo, Solomon Kadis, and James R. Maudsley 1046

Ezzell, J.W., Jr.
Glucosamine substitution and muramidase susceptibility in *Bacillus anthracis*
Gene F. Zipperle, Jr., John W. Ezzell, Jr., and Ronald J. Doyle 553

Falkinham, J.O., III
Recovery and survival of nontuberculous mycobacteria under various growth and decontamination conditions
Robert W. Brooks, Karen L. George, Bruce C. Parker, Joseph O. Falkinham III, and Howard Gruft 1112

Falkler, W.A., Jr.
Distribution of bdellovibrios in the water column of an estuary
Henry N. Williams and William A. Falkler, Jr. 971

Faulkner, R.S.
Seroepidemiology of Q fever in Nova Scotia and Prince Edward Island
Thomas J. Marrie, John Van Buren, Ruth S. Faulkner, E. Vanora Haldane, James C. Williams, and Carol Kwan 129

Fedorak, P.M.
Oil-degrading capabilities of yeasts and fungi isolated from coastal marine environments
P.M. Fedorak, K.M. Semple, and D.W.S. Westlake 565

Fein, J.
Septation in *Zymomonas mobilis*
T. Beveridge, R. Harris, J. Fein, H. Lawford, and G.R. Lawford 1283

Fein, J.E.
Evaluation of D-xylose fermenting yeasts for utilization of a wood-derived hemicellulose hydrolysate
Jared E. Fein, S. Radig Tallim, and G. Ross Lawford 682

Ferguson, K.P.
Morphological stabilization of the glycocalyces of 23 strains of five *Bacteroides* species using specific antisera
Dwight W. Lambe, Jr., K.J. Mayberry-Carson, Kaethe P. Ferguson, and J. William Costerton 809

Ferris, F.G.
Structure and cell envelope associations of flagellar basal complexes of *Vibrio cholerae* and *Campylobacter fetus*
F.G. Ferris, T.J. Beveridge, M.L. Marceau-Day, and A.D. Larson 322

Erratum: Structure and cell envelope associations of flagellar basal complexes of *Vibrio cholerae* and *Campylobacter fetus*
F.G. Ferris, T.J. Beveridge, M.L. Marceau-Day, and A.D. Larson 1092

Flournoy, D.J.
Rapid detection of methicillin-resistant staphylococci with the MS-2 system
D.J. Flournoy, S.M. Hussain Qadri, and W.Steve Johnson 488

Fogarty, W.M.
Dialysis culture for the production of *Pseudomonas saccharophila* α-amylase
Sunil K. Kadam and William M. Fogarty 952

Fomunyam, R.T.
Hydrolysis of linamarin by intestinal bacteria
R.T. Fomunyam, A.A. Adegbola and O.K. Oke 1530

Fontaine, M.S.
Levels of trehalose and glycogen in *Frankia* sp. HFPArI3 (Actinomycetales)
Mary F. Lopez, Mark S. Fontaine, and John G. Torrey 746

Forsberg, C.W.
Multiplicity of extracellular β-(1,4)-endoglucanases of *Bacteroides succinogenes* S85
H.E. Schellhorn and C.W. Forsberg 930

Fournet, B.
Composition chimique et ultrastructure des parois des corps hyphaux et des azygospores de *Conidiobolus obscurus*
J.P. Latgé, B. Fournet, G. Cole, D. Dubourdieu et N. Tong 1507

Frontling, R.A.
Comparative pathogenicity of auxotrophic mutants of *Candida albicans*
MARCIA MANNING, CHRISTINA B. SNODDY, and ROBERT A. FROMTLING 31

Fung, D.Y.C.
Growth of yeast and mold on trypan blue agar in conjunction with the ISO-GRID system
C.C. SHEREE LIN, DANIEL Y.C. FUNG, and PHYLLIS ENTIS 1405

Fung, S.S.
PZ-peptidase activities of some black-pigmented *Bacteroides* species
STEPHEN K. NG and SAMUEL S. FUNG 1305

Furness, G.
Relationship between group JK corynebacteria and the biotypes of *Corynebacterium genitalium* and *Corynebacterium pseudogenitalium*
ALAN T. EVANGELISTA, KAREN M. COPPOLA, and GEOFFREY FURNESS 1052

Furutani, A.
A method for measuring the response of sediment microbial communities to environmental perturbations
AKIRA FURUTANI, JOHN W.M. RUDD, and C.A. KELLY 1408

Gaucher, G.M.
An assay for the measurement of the protein content of cells immobilized in carrageenan
A. JONES, T. RAZNIEWSKA, B.H. LESSER, R. SIQUEIRA, D. BERK, L.A. BEHIE, and G.M. GAUCHER 475

Gauvreau, D.
Directed biosynthesis of novel derivatives of echinomycin by *Streptomyces echinatus*. I. Effect of exogenous analogues of quinoxaline-2-carboxylic acid on the fermentation
D. GAUVREAU and M.J. WARING 439

Studies on antibiotic biosynthesis by protoplasts and resting cells of *Streptomyces echinatus*. Part I. The synthesis of echinomycin
D. GAUVREAU and M.J. WARING 721

Directed biosynthesis of novel derivatives of echinomycin. II. Purification and structure elucidation
D. GAUVREAU and M.J. WARING 730

George, K.L.
Recovery and survival of nontuberculous mycobacteria under various growth and decontamination conditions
ROBERT W. BROOKS, KAREN L. GEORGE, BRUCE C. PARKER, JOSEPH O. FALKINHAM III, and HOWARD GRUFT 1112

Germida, J.J.
Spontaneous induction of bacteriophage during growth of *Azospirillum brasilense* in complex media
JAMES J. GERMIDA 805

Ghosh, A.
Specificity of subcellular distribution of alkaline phosphatase in *Bacillus licheniformis* 749/C
ARATI GHOSH, STEVE VALLESPIR, and B.K. GHOSH 113

Ghosh, B.K.
Specificity of subcellular distribution of alkaline phosphatase in *Bacillus licheniformis* 749/C
ARATI GHOSH, STEVE VALLESPIR, and B.K. GHOSH 113

Gilleland, H.E., Jr.
Chemical alterations in cell envelopes of *Pseudomonas aeruginosa* upon exposure to polymyxin: a possible mechanism to explain adaptive resistance to polymyxin
H.E. GILLELAND, JR., F.R. CHAMPLIN, and ROBERT S. CONRAD 869

Goas, G.
Osmoregulation in *Klebsiella pneumoniae:* enhancement of anaerobic growth and nitrogen fixation under stress by proline betaine, γ-butyrobetaine, and other related compounds
DANIEL LE RUDULIER, THEOPHILE BERNARD, GABRIELLE GOAS, and JACK HAMELIN 299

Gochenaur, S.E.
Fungi of a Long Island oak–birch forest. III. Distribution and survival of ascospores in the A horizon
LOIS ZLATTNER and S.E. GOCHENAUR 389

Gollop, R.
The expression of nitrate reductase in free-living *Rhizobium* sp.
RACHEL GOLLOP and YAEL J. AVISSAR 890

Gomez-Miranda, B.
Acidic exopolysaccharide from *Penicillium allahabadense*
P. RUPÉREZ, B. GOMEZ-MIRANDA, and J.A. LEAL 1157

Gonçalves, M.H.
A turbidimetric and electron microscopic study of the effects of several parameters on the lysis of *Streptococcus faecalis* by lysozyme
M. EGÍDIA CARVALHO, M. HELENA GONÇALVES, and M.T. SILVA 905

Gottlieb, D.
Role of antibiosis in antagonism of *Streptomyces hygroscopicus* var. *geldanus* to *Rhizoctonia solani* in soil
CRAIG S. ROTHROCK and DAVID GOTTLIEB 1440

Goulay, J.L.
Étude comparative de la transformation et de la fusion induite par les polyéthyléneglycols chez *Acholeplasma laidlawii* B
J.L. GOULAY, J.C. DARBORD et A. DESVIGNES 40

Goyke, T.
Comparison of commercial beef extracts and similar materials for recovering viruses from environmental samples
CHRISTON J. HURST, DANIEL R. DAHLING, ROBERT S. SAFFERMAN, and TAMARA GOYKE 1253

Grange, F.
Microcycle conidiation induced by partial nitrogen deprivation in *Neurospora crassa*
R. GUIGNARD, F. GRANGE, and G. TURIAN 1210

Graves, S.
Oxygen toxicity in *Treponema pallidum*: deoxyribonucleic acid single-stranded breakage induced by low doses of hydrogen peroxide
BRET M. STEINER, GRACE H.W. WONG, PRAMOD SUTRAVE, and STEPHEN GRAVES 1467

Greer, C.W.
Purification and properties of ι-carrageenase from a marine bacterium
C.W. Greer and W. Yaphe **1500**

Gregory, B.E.
Virological examination of drinking water: a Canadian collaborative study
Pierre Payment, Michel Trudel, S.A. Sattar, V.S. Springthorpe, T.P. Subrahmanyan, B.E. Gregory, A.H. Vajdic, P. Blaskovic, I.J. Guglielmi, and O. Kudrewko **105**

Grenier, D.
Properties of oral asaccharolytic black-pigmented *Bacteroides*
D. Mayrand, G. Bourgeau, D. Grenier, and J.-M. Lacroix **1133**

Grimes, D.J.
Viable but nonrecoverable stage of *Salmonella enteritidis* in aquatic systems
D.B. Roszak, D.J. Grimes, and R.R. Colwell **3334**

Seasonal study of a freshwater lake and migratory waterfowl for *Campylobacter jejuni*
G.A. Hill and D.J. Grimes **845**

Gruft, H.
Recovery and survival of nontuberculous mycobacteria under various growth and decontamination conditions
Robert W. Brooks, Karen L. George, Bruce C. Parker, Joseph O. Falkinham III, and Howard Gruft **1112**

Guerraz, D.
Evaluation of a pour-plate system with a rabbit plasma – bovine fibrinogen agar for the enumeration of *Staphylococcus aureus* in food
H.J. Beckers, F.M. Van Leusden, O. Bindschedler, and D. Guerraz **470**

Guglielmi, I.J.
Virological examination of drinking water: a Canadian collaborative study
Pierre Payment, Michel Trudel, S.A. Sattar, V.S. Springthorpe, T.P. Subrahmanyan, B.E. Gregory, A.H. Vajdic, P. Blaskovic, I.J. Guglielmi, and O. Kudrewko **105**

Guignard, R.
Microcycle conidiation induced by partial nitrogen deprivation in *Neurospora crassa*
R. Guignard, F. Grange, and G. Turian **1210**

Guillaume, J.-B.
Rhizobium meliloti Tn*5* induced auxotrophic mutants responding to different biosynthetic intermediates
Hassan Ali, Max Béchet, Christian Niel, and Jean-Bernard Guillaume **507**

Guimarães, M.F.
Induction and repression of L-fucose dehydrogenase of *Pullularia pullulans*
P.F. Conter, M.F. Guimarães, and L.A. Veiga **753**

Haldane, E.V.
Seroepidemiology of Q fever in Nova Scotia and Prince Edward Island
Thomas J. Marrie, John Van Buren, Ruth S. Faulkner, E. Vanora Haldane, James C. Williams, and Carol Kwan **129**

Halland, L.
Protoplast fusion within the genus *Kluyveromyces* van der Walt emend. van der Walt
Elzbieta Johannsen, Linda Halland, and Annette Opperman **540**

Hamelin, J.
Osmoregulation in *Klebsiella pneumoniae:* enhancement of anaerobic growth and nitrogen fixation under stress by proline betaine, γ-butyrobetaine, and other related compounds
Daniel Le Rudulier, Theophile Bernard, Gabrielle Goas, and Jack Hamelin **299**

Hamlett, N.V.
Prevalence of extreme detergent resistance among the *Enterobacteriaceae*
Vance C. Kramer, Kenneth W. Nickerson, Nancy V. Hamlett, and Caroline O'Hara **711**

Hampson, M.C.
Resting sporangium of *Synchytrium endobioticum*: partial characterization of the cell wall protein
T.R. Patel, A.K. Bal, and M.C. Hampson **1295**

Hand, R.
The distribution of large T antigen in simian virus 40 nucleoprotein complexes
Peter Milthorp, Ernst Baumann, and Roger Hand **622**

Hankinson, T.R.
Examination of an acid forest soil for ammonia- and nitrite-oxidizing autotrophic bacteria
T.R. Hankinson and E.L. Schmidt **1125**

Hanna, K.
The effect of salt concentration on the phospholipid and fatty acid composition of the moderate halophile *Vibrio costicola*
Kim Hanna, Carmela Bengis-Garber, D.J. Kushner, Margot Kogut, and Morris Kates **669**

Hansman, D.
Serotype distribution of meningococci isolated in South Australia 1971 through 1980
F.E. Ashton, A. Ryan, B.B. Diena, and D. Hansman **1289**

Harris, R.
Septation in *Zymomonas mobilis*
T. Beveridge, R. Harris, J. Fein, H. Lawford, and G.R. Lawford **1283**

Hartel, P.G.
Temperature and desiccation tolerance of cowpea rhizobia
Peter G. Hartel and Martin Alexander **820**

Harwig, J.
Adaptational changes in *Staphylococcus aureus* MF31 grown above its maximum temperature when protected by NaCl: physiological studies
A. Hurst, Esther Ofori, A.A. El-Banna, and J. Harwig **1105**

Hashimoto, T.
Morphogenesis of arthroconidiation in the dermatophyte *Trichophyton mentagrophytes* with special reference to wall ontogeny
TADAYO HASHIMOTO, R.G. EMYANITOFF, R.C. MOCK, and J.H. POLLACK 1415

Heitkamp, M.A.
Impact of an oil field effluent on microbial activities in a Wyoming river
MICHAEL A. HEITKAMP and B. THOMAS JOHNSON 786

Hendry, A.T.
Growth inhibition of *Neisseria gonorrhoeae* isolates by L-phenylalanine and its analogues in defined media
A.T. HENDRY and J.R. DILLON 1319

Herr, F.
The nucleotide sequence homologies of unique DNA's of some cultivated and wild mushrooms
PAUL A. HORGEN, RICHARD ARTHUR, OLIA DAVY, ANN MOUM, FRANK HERR, NEIL STRAUS, and JAMES ANDERSON 587

Hildebrand, D.C.
Use of DNA hybridization values to construct three-dimensional models of fluorescent pseudomonad relationships
D.C. HILDEBRAND, O.C. HUISMAN, and M.N. SCHROTH 306

Hill, G.A.
Seasonal study of a freshwater lake and migratory waterfowl for *Campylobacter jejuni*
G.A. HILL and D.J. GRIMES 845

Hintermann, G.
Tyrosinase activity in *Streptomyces glaucescens* is controlled by three chromosomal loci
RETO CRAMERI, GILBERTO HINTERMANN, RALF HÜTTER, and TOBIAS KIESER 1058

Hoben, H.J.
The influence of high temperatures on the growth and survival of *Rhizobium* spp. in peat inoculants during preparation, storage, and distribution
P. SOMASEGARAN, V.G. REYES, and H.J. HOBEN 23

Hochstein, L.I.
Electron transport in *Paracoccus halodenitrificans* and the role of *Ubiquinone*
LAWRENCE I. HOCHSTEIN and SONJA E. CRONIN 572

The growth of *Paracoccus halodenitrificans* in a defined medium
LAWRENCE I. HOCHSTEIN and GERALDINE A. TOMLINSON 837

Holder, I.A.
Experimental studies of the pathogenesis of infections due to *Pseudomonas aeruginosa*: elastase, an IgG protease
IAN ALAN HOLDER and ROBERT WHEELER 1118

Horgen, P.A.
The nucleotide sequence homologies of unique DNA's of some cultivated and wild mushrooms
PAUL A. HORGEN, RICHARD ARTHUR, OLIA DAVY, ANN MOUM, FRANK HERR, NEIL STRAUS, and JAMES ANDERSON 587

Horikoshi, K.
Cellulases of an alkalophilic *Bacillus* strain isolated from soil
K. HORIKOSHI, M. NAKAO, Y. KURONO, and N. SASHIHARA 774

Hoyle, B.D.
Metal binding by the peptidoglycan sacculus of *Escherichia coli* K-12
B.D. HOYLE and T.J. BEVERIDGE 204

Huber, R.E.
Escherichia coli growth on lactose requires cycling of β-galactosidase products into the medium
R.E. HUBER and K.L. HURLBURT 411

Huisman, O.C.
Use of DNA hybridization values to construct three-dimensional models of fluorescent pseudomonad relationships
D.C. HILDEBRAND, O.C. HUISMAN, and M.N. SCHROTH 306

Hurlburt, K.L.
Escherichia coli growth on lactose requires cycling of β-galactosidase products into the medium
R.E. HUBER and K.L. HURLBURT 411

Hurst, A.
Adaptational changes in *Staphylococcus aureus* MF31 grown above its maximum temperature when protected by NaCl: physiological studies
A. HURST, ESTHER OFORI, A.A. EL-BANNA, and J. HARWIG 1105

Adaptational changes in *Staphylococcus aureus* MF 31 grown above its maximum growth temperature when protected by sodium chloride: lipid studies
A. HURST, ESTHER OFORI, INDIRA VISHNUBHATLA, and M. KATES 1424

Hurst, C.J.
Comparison of commercial beef extracts and similar materials for recovering viruses from environmental samples
CHRISTON J. HURST, DANIEL R. DAHLING, ROBERT S. SAFFERMAN, and TAMARA GOYKE 1253

Husain, A.
Production of fumigaclavine A by *Aspergillus tamarii* Kita.
K.K. JANARDHANAN, ABDUL SATTAR, and AKHTAR HUSAIN 247

Hütter, R.
Tyrosinase activity in *Streptomyces glaucescens* is controlled by three chromosomal loci
RETO CRAMERI, GILBERTO HINTERMANN, RALF HÜTTER, and TOBIAS KIESER 1058

Hynes, R.K.
Production of nitrous oxide by *Nitrosomonas europaea:* effects of acetylene, pH, and oxygen
RUSSELL K. HYNES and ROGER KNOWLES 1397

Imai, A.
Indigenous microfloras and resistance to bacterial infection in mice with experimentally induced diabetes: a possible animal model for opportunistic infection
AKIHIRO IMAI, KEIKO MORISHITA, and YOKO KURIHARA 186

Endogenous infection in mice with streptozotocin-induced diabetes. A feature of bacterial translocation
AKIHIRO IMAI and YOKO KURIHARA 1344

Ishiguro, E.E.
Properties of cell wall peptidoglycan synthesized by amino acid deprived *relA* mutants of *Escherichia coli*
DÉSIRÉE VANDERWEL and EDWARD E. ISHIGURO 1239

Ishikawa, T.
Effects of sugars and polyols on basidiocarp formation in a phosphoglucose isomerase mutant of *Coprinus cinereus*
HIROSHI NYUNOYA, TSUNEO TAKEMARU, and TATSUO ISHIKAWA 45

Itoh, S.
Microbial resolution of DL-*N*-benzyloxycarbonyl-*p*-hydroxyphenylglycine by *Streptomyces zaomyceticus*
Y. SUHARA, SAYURI ITOH, KAZUTERU YOKOSE, RIEKO NINOMIYA, KIMIHIRO WATANABE, and HIROMI B. MARUYAMA 1301

Janardhanan, K.K.
Production of fumigaclavine A by *Aspergillus tamarii* Kita.
K.K. JANARDHANAN, ABDUL SATTAR, and AKHTAR HUSAIN 247

Jarrell, K.F.
Methanogenesis in the absence of intracytoplasmic membranes
G.D. SPROTT, L.C. SOWDEN, J.R. COLVIN, K.F. JARRELL, and T.J. BEVERIDGE 594

Intracellular potassium concentration and relative acidity of the ribosomal proteins of methanogenic bacteria
K.F. JARRELL, G.D. SPROTT, and A.T. MATHESON 663

Jaworski, A.
Protoplast release from fungi capable of steroid transformation
J. DŁUGOŃSKI, L. SEDLACZEK, and A. JAWORSKI 57

Jen, W.-C.
The antibacterial activity of some naturally occurring 2,5-dihydroxy-1,4-benzoquinones
D. BREWER, W.-C. JEN, G.A. JONES, and A. TAYLOR 1068

Jensen, H.B.
Nitrous oxide production from nitrification and denitrification in marine sediment at low oxygen concentrations
KIRSTEN SCHANNONG JØRGENSEN, HANNE BECK JENSEN, and JAN SØRENSEN 1073

Jofre, J.
PI bacteriophage and tellurite sensitivity in *Klebsiella pneumoniae* and *Escherichia coli*
JUAN TOMÁS, MIGUEL REGUÉ, RAMÓN PARÉS, JUAN JOFRE, and WILLIAM W. KAY 830

Johannsen, E.
Protoplast fusion within the genus *Kluyveromyces* van der Walt emend. van der Walt
ELZBIETA JOHANNSEN, LINDA HALLAND, and ANNETTE OPPERMAN 540

Johnson, B.T.
Impact of an oil field effluent on microbial activities in a Wyoming river
MICHAEL A. HEITKAMP and B. THOMAS JOHNSON 786

Johnson, J.L.
Differential characteristics of catalase-positive campylobacters correlated with DNA homology groups
R. MARTIN ROOP II, ROBERT M. SMIBERT, JOHN L. JOHNSON, and NOEL R. KRIEG 938

Johnson, K.G.
Purification and characterization of an exoglucanase from *Streptomyces flavogriseus*
C.R. MACKENZIE, D. BILOUS, and K.G. JOHNSON 1171

Johnson, W.S.
Rapid detection of methicillin-resistant staphylococci with the MS-2 system
D.J. FLOURNOY, S.M. HUSSAIN QADRI, and W.STEVE JOHNSON 488

Joly, J.R.
Ecological distribution of *Legionellaceae* in the Quebec city area
JEAN R. JOLY, MAURICE BOISSINOT, JEAN DUCHAINE, MARIE DUVAL, JAMEL RAFRAFI, DANIELLE RAMSAY, and ROBERT LETARTE 63

Jones, A.
An assay for the measurement of the protein content of cells immobilized in carrageenan
A. JONES, T. RAZNIEWSKA, B.H. LESSER, R. SIQUEIRA, D. BERK, L.A. BEHIE, and G.M. GAUCHER 475

Jones, G.A.
The antibacterial activity of some naturally occurring 2,5-dihydroxy-1,4-benzoquinones
D. BREWER, W.-C. JEN, G.A. JONES, and A. TAYLOR 1068

Jones, R.D.
Effects of various parameters on carbon monoxide oxidation by ammonium oxidizers
RONALD D. JONES and RICHARD Y. MORITA 894

Effect of several nitrification inhibitors on carbon monoxide and methane oxidation by ammonium oxidizers
RONALD D. JONES and RICHARD Y. MORITA 1276

Jørgensen, K.S.
Nitrous oxide production from nitrification and denitrification in marine sediment at low oxygen concentrations
KIRSTEN SCHANNONG JØRGENSEN, HANNE BECK JENSEN, and JAN SØRENSEN 1073

Joseph, S.W.
In vitro and *in vivo* pathologic effects of *Vibrio parahaemolyticus* on human epithelial cells
B.R. MERRELL, R.I. WALKER, and S.W. JOSEPH 381

Kadam, S.K.
Dialysis culture for the production of *Pseudomonas saccharophila* α-amylase
SUNIL K. KADAM and WILLIAM M. FOGARTY 952

Kadis, S.
Siderophore production by *Proteus mirabilis*
LISA P. EVANYLO, SOLOMON KADIS, and JAMES R. MAUDSLEY 1046

Kane, H.
Lateral flagellum of *Vibrio fluvialis*: a species-specific antigen
SUMIO SHINODA, NORIKO NAKAHARA, and HARUAKI KANE 1525

Kang, C.Y.
Positive serological evidence that Hantaan virus, the etiologic agent of hemorrhagic fever with renal syndrome, is endemic in Canada
HO WANG LEE, IN WHA SEONG, LUCK JU BAEK, DONALD A. MCLEOD, JEONG SUN SEO, and C. YONG KANG 1137

Kapustka, L.A.
Polyphosphate body and acid phosphatase localization in *Nostoc* sp.
JOHN D. DUBOIS, KEITH R. ROBERTS, and LAWRENCE A. KAPUSTKA 8

Karaivanov, L.
Morphology of *Pasteurella multocida* bacteriophages
H.-W. Ackermann and L. Karaivanov **1141**

Karunasagar, I.
Levels of *Vibrio parahaemolyticus* in Indian shrimp undergoing processing for export
I. Karunasagar, M.N. Venugopal, and
Indrani Karunasagar **713**

Katan, T.
Genetics of fungicide resistance in *Talaromyces flavus*
Talma Katan, M.T. Dunn, and G.C. Papavizas **1079**

Kates, M.
The effect of salt concentration on the phospholipid and fatty acid composition of the moderate halophile *Vibrio costicola*
Kim Hanna, Carmela Bengis-Garber, D.J. Kushner,
Margot Kogut, and Morris Kates **669**

Adaptational changes in *Staphylococcus aureus* MF 31 grown above its maximum growth temperature when protected by sodium chloride: lipid studies
A. Hurst, Esther Ofori, Indira Vishnubhatla, and
M. Kates **1424**

Kaufman, T.D.
The effect of free-living nematodes and compost moisture on growth and yield in *Agaricus brunnescens*
T.D. Kaufman, F.L. Lukezic, and J.R. Bloom **503**

Kay, W.W.
Pl bacteriophage and tellurite sensitivity in *Klebsiella pneumoniae* and *Escherichia coli*
Juan Tomás, Miguel Regué, Ramón Parés, Juan Jofre,
and William W. Kay **830**

Tricarboxylate transport in a Cit^+ *Escherichia coli*: evidence for the role of an outer membrane protein
Juan. M. Tomás and William W. Kay **916**

Kelln, R.A.
Evidence for involvement of *pyrH*$^+$ of an *Escherichia coli* K-12 F-prime factor in inhibiting construction of hybrid merodiploids with *Salmonella typhimurium*
Rod A. Kelln **991**

Kelly, C.A.
A method for measuring the response of sediment microbial communities to environmental perturbations
Akira Furutani, John W.M. Rudd, and C.A. Kelly **1408**

Kerwin, J.L.
Fatty acid regulation of the germination of *Erynia variabilis* conidia on adults and puparia of the lesser housefly, *Fannia canicularis*
James L. Kerwin **158**

Khowala, S.
The production of extracellular endo-α-mannanase by the mushroom *Volvariella volvacea*
Suman Khowala and S. Sengupta **657**

Khrenova, E.A.
Pseudomonas bacteriophage φKZ contains an inner body in its capsid
V.N. Krylov, T.A. Smirnova, I.B. Minenkova,
T.G. Plotnikova, I.Z. Zhazikov, and E.A. Khrenova **758**

Kieser, T.
Tyrosinase activity in *Streptomyces glaucescens* is controlled by three chromosomal loci
Reto Crameri, Gilberto Hintermann, Ralf Hütter, and
Tobias Kieser **1058**

Kloepper, J.W.
A method for assessing the root-colonizing capacity of bacteria on maize
F.M. Scher, J.S. Ziegle, and J.W. Kloepper **151**

Knowles, R.
Superoxide dismutase, catalase, and peroxidase in ammonium-grown and nitrogen-fixing *Azospirillum brasilense*
Richard W. Clara and Roger Knowles **1222**

Production of nitrous oxide by *Nitrosomonas europaea:* effects of acetylene, pH, and oxygen
Russell K. Hynes and Roger Knowles **1397**

Kogut, M.
The effect of salt concentration on the phospholipid and fatty acid composition of the moderate halophile *Vibrio costicola*
Kim Hanna, Carmela Bengis-Garber, D.J. Kushner,
Margot Kogut, and Morris Kates **669**

König, H.
Isolation and characterization of ***Methanobacterium uliginosum*** sp. nov. from a marshy soil
Helmut König **1475**

Kordyum, V.A.
Isolation of nonlysogenic bacteria from λ-lysogenized strains using antibiotic-resistant phage
V.A. Kordyum, S.I. Chernykh, and I.Y. Medvedeva **74**

Kow, Y.W.
Ubiquinone in hydrogen metabolism by *Azotobacter vinelandii*
Yoke W. Kow **1421**

Kramer, V.C.
A transport-dependent energy burden imposed by growth of *Enterobacter cloacae* in the presence of 10% sodium dodecyl sulfate
Vance C. Kramer and Kenneth W. Nickerson **699**

Prevalence of extreme detergent resistance among the *Enterobacteriaceae*
Vance C. Kramer, Kenneth W. Nickerson,
Nancy V. Hamlett, and Caroline O'Hara **711**

Kretova, A.F.
Bacillus mycoides phages and their satellites
Anna S. Tikhonenko, Nina N. Belyaeva, and
Anna F. Kretova **691**

Krieg, N.R.
Differential characteristics of catalase-positive campylobacters correlated with DNA homology groups
R. Martin Roop II, Robert M. Smibert,
John L. Johnson, and Noel R. Krieg **938**

Krouse, H.R.
Sulfur isotope fractionation during SO_3^{2-} reduction by different clostridial species
E.J. Laishley, M.G. Tyler, and H.R. Krouse **841**

Krylov, V.N.
Pseudomonas bacteriophage ϕKZ contains an inner body in its capsid
V.N. Krylov, T.A. Smirnova, I.B. Minenkova, T.G. Plotnikova, I.Z. Zhazikov, and E.A. Khrenova **758**

Kubicek, C.P.
Pyruvate kinase from *Aspergillus niger*: a regulatory enzyme in glycolysis?
Bibiana Meixner-Monori, Christian P. Kubicek, and Max Röhr **16**

Xylose metabolism in *Pachysolen tannophilus:* purification and properties of xylose reductase
Günther Ditzelmüller, Christian P. Kubicek, Wilfried Wöhrer, and Max Röhr **1330**

Kudrewko, O.
Virological examination of drinking water: a Canadian collaborative study
Pierre Payment, Michel Trudel, S.A. Sattar, V.S. Springthorpe, T.P. Subrahmanyan, B.E. Gregory, A.H. Vajdic, P. Blaskovic, I.J. Guglielmi, and O. Kudrewko **105**

Kurihara, Y.
Indigenous microfloras and resistance to bacterial infection in mice with experimentally induced diabetes: a possible animal model for opportunistic infection
Akihiro Imai, Keiko Morishita, and Yoko Kurihara **186**

Endogenous infection in mice with streptozotocin-induced diabetes. A feature of bacterial translocation
Akihiro Imai and Yoko Kurihara **1344**

Kurono, Y.
Cellulases of an alkalophilic *Bacillus* strain isolated from soil
K. Horikoshi, M. Nakao, Y. Kurono, and N. Sashihara **774**

Kushner, D.J.
The effect of salt concentration on the phospholipid and fatty acid composition of the moderate halophile *Vibrio costicola*
Kim Hanna, Carmela Bengis-Garber, D.J. Kushner, Margot Kogut, and Morris Kates **669**

Kwan, C.
Seroepidemiology of Q fever in Nova Scotia and Prince Edward Island
Thomas J. Marrie, John Van Buren, Ruth S. Faulkner, E. Vanora Haldane, James C. Williams, and Carol Kwan **129**

Lacroix, J.-M.
Properties of oral asaccharolytic black-pigmented *Bacteroides*
D. Mayrand, G. Bourgeau, D. Grenier, and J.-M. Lacroix **1133**

Laishley, E.J.
The role of *Thiobacillus albertis* glycocalyx in the adhesion of cells to elemental sulfur
R.D. Bryant, J.W. Costerton, and E.J. Laishley **81**

Sulfur isotope fractionation during SO_3^{2-} reduction by different clostridial species
E.J. Laishley, M.G. Tyler, and H.R. Krouse **841**

Lallier, R.
Difference in the extracellular products of two strains of *Aeromonas hydrophila* virulent and weakly virulent for fish
R. Lallier, F. Bernard, and G. Lalonde **900**

Lalonde, G.
Difference in the extracellular products of two strains of *Aeromonas hydrophila* virulent and weakly virulent for fish
R. Lallier, F. Bernard, and G. Lalonde **900**

Lambe, D.W., Jr.
Morphological stabilization of the glycocalyces of 23 strains of five *Bacteroides* species using specific antisera
Dwight W. Lambe, Jr., K.J. Mayberry-Carson, Kaethe P. Ferguson, and J. William Costerton **809**

Lambert, F.
Purification and properties of the proteinase produced *in vitro* by *Verticillium dahliae*
François Lambert and Serge Pujarniscle **1488**

Lamonde, L.
Immunogold electron microscopy of surface antigens of oral bacteria
C. Mouton and L. Lamonde **1008**

Langie, R.
Degradation of lignocellulose in wheat straw versus hardwood by *Cyathus* and related species (Nidulariaceae)
D.T. Wicklow, R. Langie, S. Crabtree, and R.W. Detroy **632**

Larson, A.D.
Structure and cell envelope associations of flagellar basal complexes of *Vibrio cholerae* and *Campylobacter fetus*
F.G. Ferris, T.J. Beveridge, M.L. Marceau-Day, and A.D. Larson **322**

Erratum: Structure and cell envelope associations of flagellar basal complexes of *Vibrio cholerae* and *Campylobacter fetus*
F.G. Ferris, T.J. Beveridge, M.L. Marceau-Day, and A.D. Larson **1092**

Latgé, J.P.
Composition chimique et ultrastructure des parois des corps hyphaux et des azygospores de *Conidiobolus obscurus*
J.P. Latgé, B. Fournet, G. Cole, D. Dubourdieu et N. Tong **1507**

Lawford, G.R.
Evaluation of D-xylose fermenting yeasts for utilization of a wood-derived hemicellulose hydrolysate
Jared E. Fein, S. Radig Tallim, and G. Ross Lawford **682**

Septation in *Zymomonas mobilis*
T. Beveridge, R. Harris, J. Fein, H. Lawford, and G.R. Lawford **1283**

Lawford, H.
Septation in *Zymomonas mobilis*
T. Beveridge, R. Harris, J. Fein, H. Lawford, and G.R. Lawford **1283**

Leal, J.A.
Acidic exopolysaccharide from *Penicillium allahabadense*
P. Rupérez, B. Gomez-Miranda, and J.A. Leal **1157**

Leath, K.T.
Virulence differences of *Fusarium roseum* isolates in red clover roots not explained by phytotoxins activity
J.C. Stutz, K.T. Leath, and F.L. Lukezic 1494

Leduc, D.
Preliminary characterization of inhibitors of *Neisseria gonorrhoeae* produced *in vitro* by *Eubacterium limosum*
A. Morin, J.-G. Bisaillon, R. Beaudet, M. Sylvestre, S.A. Saheb, and D. Leduc 251

Lee, H.W.
Positive serological evidence that Hantaan virus, the etiologic agent of hemorrhagic fever with renal syndrome, is endemic in Canada
Ho Wang Lee, In Wha Seong, Luck Ju Baek, Donald A. McLeod, Jeong Sun Seo, and C. Yong Kang 1137

Lee, P.W.K.
Interaction of *Clostridium difficile* toxin A with L cells in culture
M.S. Shahrabadi, L.E. Bryan, and P.W.K. Lee 874

Lee, W.S.
Membrane enzymes associated with the dissimilation of some citric acid cycle substrates and production of extracellular oxidation products in chemostat cultures of *Pseudomonas fluorescens*
Woo S. Lee, John K. Cooper, and William H. Lynch 396

Lefebvre, G.M.
Triggering in unactivated *Bacillus megaterium* spores
Doris Thibeault and Gerald M. Lefebvre 997

Lehrer, N.
Adherence of *Candida albicans* to buccal and vaginal epithelial cells: ultrastructural observations
Richard A. Calderone, Nurith Lehrer, and Esther Segal 1001

Lesser, B.H.
An assay for the measurement of the protein content of cells immobilized in carrageenan
A. Jones, T. Razniewska, B.H. Lesser, R. Siqueira, D. Berk, L.A. Behie, and G.M. Gaucher 475

Le Rudulier, D.
Osmoregulation in *Klebsiella pneumoniae:* enhancement of anaerobic growth and nitrogen fixation under stress by proline betaine, γ-butyrobetaine, and other related compounds
Daniel Le Rudulier, Theophile Bernard, Gabrielle Goas, and Jack Hamelin 299

Letarte, R.
Ecological distribution of *Legionellaceae* in the Quebec city area
Jean R. Joly, Maurice Boissinot, Jean Duchaine, Marie Duval, Jamel Rafrafi, Danielle Ramsay, and Robert Letarte 63

Lewis, J.A.
Chlamydospore formation by *Trichoderma* spp. in natural substrates
J.A. Lewis and G.C. Papavizas 1

Effect of the fumigant metham on *Trichoderma* spp.
J.A. Lewis and G.C. Papavizas 739

Lifshitz, R.
Hyphal interactions between a mycoparasite, *Pythium nunn*, and several soil fungi
R. Lifshitz, M. Dupler, Y. Elad, and R. Baker 1482

Lin, C.C.S.
Growth of yeast and mold on trypan blue agar in conjunction with the ISO-GRID system
C.C. Sheree Lin, Daniel Y.C. Fung, and Phyllis Entis 1405

Linderman, R.G.
Evidence for the involvement of the soil microbiota in the exclusion of *Fusarium* from coniferous forest soils
David A. Schisler and R.G. Linderman 142

Lloyd, G.M.
The isolation and characterisation of cytoplasmic and outer membranes from *Micrococcus cryophilus*
Geoffrey M. Lloyd and Nicholas J. Russell 1357

Löffler, H.J.M.
Ammonia-induced mycostasis is not mediated by enhanced release of carbon compounds
H.J.M. Löffler and B. Schippers 1038

Lopez, M.F.
Levels of trehalose and glycogen in *Frankia* sp. HFPArI3 (Actinomycetales)
Mary F. Lopez, Mark S. Fontaine, and John G. Torrey 746

Lugowski, C.
Characterization of anti-*Citrobacter* 036 specific polysaccharide monoclonal antibodies
P.J. Shearman, D.R. Bundle, E. Romanowska, C. Lugowski, and M. Bogulska 91

Lukezic, F.L.
The effect of free-living nematodes and compost moisture on growth and yield in *Agaricus brunnescens*
T.D. Kaufman, F.L. Lukezic, and J.R. Bloom 503

Virulence differences of *Fusarium roseum* isolates in red clover roots not explained by phytotoxins activity
J.C. Stutz, K.T. Leath, and F.L. Lukezic 1494

Lynch, W.H.
Membrane enzymes associated with the dissimilation of some citric acid cycle substrates and production of extracellular oxidation products in chemostat cultures of *Pseudomonas fluorescens*
Woo S. Lee, John K. Cooper, and William H. Lynch 396

Lyons, J.M.
Specific cross-protective antigonococcal immunity in the murine genital tract
L.B. Corbeil, A.C. Wunderlich, J.M. Lyons, and A.I. Braude 482

MacKenzie, C.R.
Purification and characterization of an exoglucanase from *Streptomyces flavogriseus*
C.R. MacKenzie, D. Bilous, and K.G. Johnson 1171

Detection of cellulase and xylanase activity in isoelectric-focused gels using agar substrate gels supported on plastic film
C.R. MacKenzie and R.E. Williams 1522

Madyastha, K.M.
Metabolism of structurally modified acyclic monoterpenes by *Pseudomonas incognita*
V. Renganathan and K. Madhava Madyastha 637

Metabolism of α-terpineol by *Pseudomonas incognita*
K. Madhava Madyastha and V. Renganathan 1429

Magee, P.T.
Protein synthesis in germinating *Saccharomyces cerevisiae* ascospores
Robert L. Armstrong, Thomas P. West, and
Paul T. Magee 345

Magnarelli, L.A.
Antibodies to *Rickettsia rickettsii* in *Peromyscus leucopus* from a focus of Rocky Mountain spotted fever in Connecticut
Louis A. Magnarelli, John F. Anderson,
Willy Burgdorfer, Robert N. Philip, and
W. Adrian Chappell 491

Maki, J.S.
Quantitative changes in fungal colony-forming units in the surface microlayers of two freshwater ponds
J.S. Maki, S.C. Danos, and C.C Remsen 578

Mallett, K.I.
Rhizomorph exudate of *Armillaria mellea*
K.I. Mallett and Nicholas Colotelo 1247

Manning, M.
Comparative pathogenicity of auxotrophic mutants of *Candida albicans*
Marcia Manning, Christina B. Snoddy, and
Robert A. Fromtling 31

Manocha, M.S.
Cell surface characteristics of *Mortierella* species and their interaction with a mycoparasite
M.S. Manocha 290

Marceau-Day, M.L.
Structure and cell envelope associations of flagellar basal complexes of *Vibrio cholerae* and *Campylobacter fetus*
F.G. Ferris, T.J. Beveridge, M.L. Marceau-Day, and
A.D. Larson 322

Erratum: Structure and cell envelope associations of flagellar basal complexes of *Vibrio cholerae* and *Campylobacter fetus*
F.G. Ferris, T.J. Beveridge, M.L. Marceau-Day, and
A.D. Larson 1092

Marrie, T.J.
Seroepidemiology of Q fever in Nova Scotia and Prince Edward Island
Thomas J. Marrie, John Van Buren, Ruth S. Faulkner,
E. Vanora Haldane, James C. Williams, and
Carol Kwan 129

Martin, C.F.
Inhibition of anion transport in human erythrocytes by pilated *Neisseria gonorrhoeae*
G.M. Wiseman, C.F. Martin, and P.J. McNicol 52

Martin, W.G.
Immunological and enzymatic properties of the *Desulfovibrio desulfuricans* hydrogenase
E. Ziomek, W.G. Martin, and R.E. Williams 1197

Martín-Luengo, F.
Nocardia in soils of southeastern Spain: abundance, distribution, and chemical characterisation
P.L. Valero-Guillén and F. Martín-Luengo 1088

Marusyk, R.G.
Isolation and partial characterization of a human adenovirus type 4 temperature-sensitive mutant (Mastadenovirus h 4 tsl)
Linda M. Mofford and R.G. Marusyk 135

Maruyama, H.B.
Microbial resolution of DL-*N*-benzyloxycarbonyl-*p*-hydroxyphenylglycine by *Streptomyces zaomyceticus*
Y. Suhara, Sayuri Itoh, Kazuteru Yokose,
Rieko Ninomiya, Kimihiro Watanabe, and
Hiromi B. Maruyama 1301

Matheson, A.T.
Intracellular potassium concentration and relative acidity of the ribosomal proteins of methanogenic bacteria
K.F. Jarrell, G.D. Sprott, and A.T. Matheson 663

Maudsley, J.R.
Siderophore production by *Proteus mirabilis*
Lisa P. Evanylo, Solomon Kadis, and
James R. Maudsley 1046

Mayberry-Carson, K.J.
Morphological stabilization of the glycocalyces of 23 strains of five *Bacteroides* species using specific antisera
Dwight W. Lambe, Jr., K.J. Mayberry-Carson,
Kaethe P. Ferguson, and J. William Costerton 809

Mayrand, D.
Properties of oral asaccharolytic black-pigmented *Bacteroides*
D. Mayrand, G. Bourgeau, D. Grenier, and
J.-M. Lacroix 1133

McCarthy, C.M.
Glutamine synthetase from *Mycobacterium avium*
Maria E. Alvarez and C.M. McCarthy 353

McLeod, D.A.
Positive serological evidence that Hantaan virus, the etiologic agent of hemorrhagic fever with renal syndrome, is endemic in Canada
Ho Wang Lee, In Wha Seong, Luck Ju Baek,
Donald A. McLeod, Jeong Sun Seo, and C. Yong Kang 1137

McNicol, L.A.
Serology and plasmid carriage in *Vibrio cholerae*
J.W. Newland, M.J. Voll, and L.A. McNicol 1149

McNicol, P.J.
Inhibition of anion transport in human erythrocytes by pilated *Neisseria gonorrhoeae*
G.M. Wiseman, C.F. Martin, and P.J. McNicol 52

Medvedeva, I.Y.
Isolation of nonlysogenic bacteria from λ-lysogenized strains using antibiotic-resistant phage
V.A. Kordyum, S.I. Chernykh, and I.Y. Medvedeva 74

Mehta, R.J.
The effect of aculeacin A and papulacandin B on morphology and cell wall ultrastructure in *Candida albicans*
J.J. Bozzola, R.J. Mehta, L.J. Nisbet, and J.R. Valenta 857

Meixner-Monori, B.
Pyruvate kinase from *Aspergillus niger*: a regulatory enzyme in glycolysis?
Bibiana Meixner-Monori, Christian P. Kubicek, and
Max Röhr 16

Melcher, U.
Erratum: Complementary DNA – 25S ribosomal RNA hybridization: an improved method for phylogenetic studies
SIAVASH BAHARAEEN, ULRICH MELCHER, and HELEN S. VISHNIAC 719

Merrell, B.R.
In vitro and *in vivo* pathologic effects of *Vibrio parahaemolyticus* on human epithelial cells
B.R. MERRELL, R.I. WALKER, and S.W. JOSEPH 381

Meyers, A.J., Jr.
Bulking in an industrial wastewater treatment system due to *Geotrichum candidum*
A.J. MEYERS, JR. 966

Miller, J.J.
In vitro experiments concerning the state of polyphosphate in the yeast vacuole
J.J. MILLER 236

Temperature regulation of nuclear division in apomictic yeast
CARL A. BILINSKI and JOHN J. MILLER 793

Miller-Wideman, M.A.
Sporulation of *Gigaspora margarita* on root cultures of tomato
M.A. MILLER-WIDEMAN and L.S. WATRUD 642

Milthorp, P.
The distribution of large T antigen in simian virus 40 nucleoprotein complexes
PETER MILTHORP, ERNST BAUMANN, and ROGER HAND 622

Minenkova, I.B.
Pseudomonas bacteriophage ϕKZ contains an inner body in its capsid
V.N. KRYLOV, T.A. SMIRNOVA, I.B. MINENKOVA, T.G. PLOTNIKOVA, I.Z. ZHAZIKOV, and E.A. KHRENOVA 758

Mishra, A.K.
Erratum: Utilization of fructose by *Azospirillum brasilense*
AMARESH DAS and AJIT K. MISHRA 867

Mock, R.C.
Morphogenesis of arthroconidiation in the dermatophyte *Trichophyton mentagrophytes* with special reference to wall ontogeny
TADAYO HASHIMOTO, R.G. EMYANITOFF, R.C. MOCK, and J.H. POLLACK 1415

Mofford, L.M.
Isolation and partial characterization of a human adenovirus type 4 temperature-sensitive mutant (Mastadenovirus h 4 tsl)
LINDA M. MOFFORD and R.G. MARUSYK 135

Moiroud, A.
An improved method for lysis of *Frankia* with achromopeptidase allows detection of new plasmids
PASCAL SIMONET, ANDRE CAPELLANO, ELISABETH NAVARRO, RENE BARDIN, and ANDRE MOIROUD 1292

Mok, W.Y.
Mycoflora of the human dermal surfaces
W.Y. MOK and M.S. BARRETO DA SILVA 1205

Moreira, E.
Le transport de la phénylalanine et de la tyrosine chez *Brevibacterium linens*: spécificité et incorporation dans les protéines
P. BOYAVAL, EVELYNE MOREIRA et M.J. DESMAZEAUD 430

Morin, A.
Preliminary characterization of inhibitors of *Neisseria gonorrhoeae* produced *in vitro* by *Eubacterium limosum*
A. MORIN, J.-G. BISAILLON, R. BEAUDET, M. SYLVESTRE, S.A. SAHEB, and D. LEDUC 251

Morishita, K.
Indigenous microfloras and resistance to bacterial infection in mice with experimentally induced diabetes: a possible animal model for opportunistic infection
AKIHIRO IMAI, KEIKO MORISHITA, and YOKO KURIHARA 186

Morita, R.Y.
Effects of various parameters on carbon monoxide oxidation by ammonium oxidizers
RONALD D. JONES and RICHARD Y. MORITA 894

Effect of several nitrification inhibitors on carbon monoxide and methane oxidation by ammonium oxidizers
RONALD D. JONES and RICHARD Y. MORITA 1276

Morton, T.
Transduction of bacteriophage resistance in *Streptococcus pyogenes* with coinfection lysates of the virulent phage $A25_{ts1-2}$ and a temperate bacteriophage 2511
JAMES G. STUART, RENE ROGEL, and TOM MORTON 1309

Moum, A.
The nucleotide sequence homologies of unique DNA's of some cultivated and wild mushrooms
PAUL A. HORGEN, RICHARD ARTHUR, OLIA DAVY, ANN MOUM, FRANK HERR, NEIL STRAUS, and JAMES ANDERSON 587

Mouton, C.
Immunogold electron microscopy of surface antigens of oral bacteria
C. MOUTON and L. LAMONDE 1008

Myers, B.
Phenotypic traits of fluorescent pseudomonads causing bacterial blotch of *Agaricus bisporus* mushrooms and other mushroom-derived fluorescent pseudomonads
P.A. ZARKOWER, P.J. WUEST, D.J. ROYSE, and B. MYERS 360

Nagendrappa, G.
Metabolism of carbaryl and carbofuran by soil-enrichment and bacterial cultures
B.S. RAJAGOPAL, V.R. RAO, G. NAGENDRAPPA, and N. SETHUNATHAN 1458

Nakahara, N.
Lateral flagellum of *Vibrio fluvialis*: a species-specific antigen
SUMIO SHINODA, NORIKO NAKAHARA, and HARUAKI KANE 1525

Nakao, M.
Cellulases of an alkalophilic *Bacillus* strain isolated from soil
K. HORIKOSHI, M. NAKAO, Y. KURONO, and N. SASHIHARA 774

Navarro, E.
An improved method for lysis of *Frankia* with achromopeptidase allows detection of new plasmids
PASCAL SIMONET, ANDRE CAPELLANO, ELISABETH NAVARRO, RENE BARDIN, and ANDRE MOIROUD 1292

Newland, J.W.
Serology and plasmid carriage in *Vibrio cholerae*
J.W. NEWLAND, M.J. VOLL, and L.A. MCNICOL 1149

Ng, S.K.
PZ-peptidase activities of some black-pigmented *Bacteroides* species
STEPHEN K. NG and SAMUEL S. FUNG **1305**

Nickerson, K.W.
A transport-dependent energy burden imposed by growth of *Enterobacter cloacae* in the presence of 10% sodium dodecyl sulfate
VANCE C. KRAMER and KENNETH W. NICKERSON **699**

Prevalence of extreme detergent resistance among the *Enterobacteriaceae*
VANCE C. KRAMER, KENNETH W. NICKERSON, NANCY V. HAMLETT, and CAROLINE O'HARA **711**

Niel, C.
Rhizobium meliloti Tn*5* induced auxotrophic mutants responding to different biosynthetic intermediates
HASSAN ALI, MAX BÉCHET, CHRISTIAN NIEL, and JEAN-BERNARD GUILLAUME **507**

Ninomiya, R.
Microbial resolution of DL-*N*-benzyloxycarbonyl-*p*-hydroxyphenylglycine by *Streptomyces zaomyceticus*
Y. SUHARA, SAYURI ITOH, KAZUTERU YOKOSE, RIEKO NINOMIYA, KIMIHIRO WATANABE, and HIROMI B. MARUYAMA **1301**

Nisbet, L.J.
The effect of aculeacin A and papulacandin B on morphology and cell wall ultrastructure in *Candida albicans*
J.J. BOZZOLA, R.J. MEHTA, L.J. NISBET, and J.R. VALENTA **857**

Niven, D.F.
The cytochrome complement of *Haemophilus parasuis*
D.F. NIVEN **763**

Porcine haemophili and actinobacilli: characterization by means of API test strips and possible taxonomic implications
T. O'REILLY, S. ROSENDAL, and D.F. NIVEN **1229**

Norrod, E.P.
A role for sulfite in inducing surface changes in *Neisseria gonorrhoeae*
E. PININA NORROD **1297**

Nyunoya, H.
Effects of sugars and polyols on basidiocarp formation in a phosphoglucose isomerase mutant of *Coprinus cinereus*
HIROSHI NYUNOYA, TSUNEO TAKEMARU, and TATSUO ISHIKAWA **45**

Obaseiki-Ebor, E.E.
The effects of chlorate- and streptomycin-resistance mutations on nitrofurantoin resistance in *Escherichia coli* K-12
EMMANUEL E. OBASEIKI-EBOR and ANTHONY S. BREEZE **1448**

Obi, S.K.C.
Some properties of a highly thermostable α-amylase from a *Thermoactinomyces* sp.
S.K.C. OBI and F.J.C. ODIBO **780**

Odibo, F.J.C.
Some properties of a highly thermostable α-amylase from a *Thermoactinomyces* sp.
S.K.C. OBI and F.J.C. ODIBO **780**

Ofori, E.
Adaptational changes in *Staphylococcus aureus* MF31 grown above its maximum temperature when protected by NaCl: physiological studies
A. HURST, ESTHER OFORI, A.A. EL-BANNA, and J. HARWIG **1105**

Adaptational changes in *Staphylococcus aureus* MF 31 grown above its maximum growth temperature when protected by sodium chloride: lipid studies
A. HURST, ESTHER OFORI, INDIRA VISHNUBHATLA, and M. KATES **1424**

Ogan, M.
Characteristics and nitrogenase activity (acetylene reduction) of microaerophilic bacteria from roots of aquatic angiosperms
M. OGAN **955**

O'Hara, C.
Prevalence of extreme detergent resistance among the *Enterobacteriaceae*
VANCE C. KRAMER, KENNETH W. NICKERSON, NANCY V. HAMLETT, and CAROLINE O'HARA **711**

Ohshima, Y.
Effects of fibronectin on the compact colony formation in staphylococci
YUKIO USUI, YUKIO OHSHIMA, and KOSAKU YOSHIDA **419**

Oke, O.L.
Hydrolysis of linamarin by intestinal bacteria
R.T. FOMUNYAM, A.A. ADEGBOLA, and O.L. OKE **1530**

Olsen, P.E.
Minimal antigenic characterization of eight *Rhizobium meliloti* strains by indirect enzyme-linked immunosorbent assay (ELISA)
P.E. OLSEN and W.A. RICE **1093**

ELISA evaluation of the competitive abilities of two *Rhizobium meliloti* strains
W.A. RICE, P.E. OLSEN, and W.J. PAGE **1187**

Opperman, A.
Protoplast fusion within the genus *Kluyveromyces* van der Walt emend. van der Walt
ELZBIETA JOHANNSEN, LINDA HALLAND, and ANNETTE OPPERMAN **540**

O'Reilly, T.
Porcine haemophili and actinobacilli: characterization by means of API test strips and possible taxonomic implications
T. O'REILLY, S. ROSENDAL, and D.F. NIVEN **1229**

Ozaki, Y.
Acetic, propionic, and oleic acid as the possible factors influencing the predominant residence of some species of *Propionibacterium* and coagulase-negative *Staphylococcus* on normal human skin
TSUTOMU USHIJIMA, MEGUMI TAKAHASHI, and YOSHIKATSU OZAKI **647**

Page, W.J.
ELISA evaluation of the competitive abilities of two *Rhizobium meliloti* strains
W.A. RICE, P.E. OLSEN, and W.J. PAGE **1187**

Panchal, C.J.
Effects of pretreatments with sulfhydryls and alkylating agents on spheroplast formation from *Schwanniomyces* species
T.M. DOWHANICK, C.J. PANCHAL, and G.G. STEWART **368**

Papa, K.E.
Genetics of *Aspergillus flavus*: linkage of aflatoxin mutants
K.E. PAPA 68

Papavizas, G.C.
Chlamydospore formation by *Trichoderma* spp. in natural substrates
J.A. LEWIS and G.C. PAPAVIZAS 1

Effect of the fumigant metham on *Trichoderma* spp.
J.A. LEWIS and G.C. PAPAVIZAS 739

Genetics of fungicide resistance in *Talaromyces flavus*
TALMA KATAN, M.T. DUNN, and G.C. PAPAVIZAS 1079

Parés, R.
Pl bacteriophage and tellurite sensitivity in *Klebsiella pneumoniae* and *Escherichia coli*
JUAN TOMÁS, MIGUEL REGUÉ, RAMÓN PARÉS, JUAN JOFRE, and WILLIAM W. KAY 830

Parker, B.C.
Recovery and survival of nontuberculous mycobacteria under various growth and decontamination conditions
ROBERT W. BROOKS, KAREN L. GEORGE, BRUCE C. PARKER, JOSEPH O. FALKINHAM III, and HOWARD GRUFT 1112

Parkinson, D.
Effects of sulphur dioxide pollution on forest soil microorganisms
R.J.F. BEWLEY and D. PARKINSON 179

Parr, T.R., Jr.
Lipopolysaccharide composition of three strains of *Haemophilus influenzae*
THOMAS R. PARR, JR. and L.E. BRYAN 1184

Patel, G.B.
Death rates of obligate anaerobes exposed to oxygen and the effect of media prereduction on cell viability
G.B. PATEL, L.A. ROTH, and B.J. AGNEW 228

Characterization and nutritional properties of ***Methanothrix concilii*** sp. nov., a mesophilic, aceticlastic methanogen
G.B. PATEL 1383

Patel, T.R.
Resting sporangium of *Synchytrium endobioticum*: partial characterization of the cell wall protein
T.R. PATEL, A.K. BAL, and M.C. HAMPSON 1295

Payment, P.
Virological examination of drinking water: a Canadian collaborative study
PIERRE PAYMENT, MICHEL TRUDEL, S.A. SATTAR, V.S. SPRINGTHORPE, T.P. SUBRAHMANYAN, B.E. GREGORY, A.H. VAJDIC, P. BLASKOVIC, I.J. GUGLIELMI, and O. KUDREWKO 105

Erratum: A survey of enteric viruses in domestic sewage
PIERRE PAYMENT, REDA AYACHE, and MICHEL TRUDEL 272

Pazzaglia, G.
In vivo protection of penicillin-susceptible *Bacteroides melaninogenicus* from penicillin by facultative bacteria which produce beta-lactamase
ITZHAK BROOK, GARRY PAZZAGLIA, JAMES C. COOLBAUGH, and RICHARD I. WALKER 98

Peschon, J.
Flagella-specific bacteriophages of *Agrobacterium tumefaciens*: demonstration of virulence of nonmotile mutants
DAVID E. BRADLEY, CARL J. DOUGLAS, and JACQUES PESCHON 676

Philip, R.N.
Antibodies to *Rickettsia rickettsii* in *Peromyscus leucopus* from a focus of Rocky Mountain spotted fever in Connecticut
LOUIS A. MAGNARELLI, JOHN F. ANDERSON, WILLY BURGDORFER, ROBERT N. PHILIP, and W. ADRIAN CHAPPELL 491

Plotnikova, T.G.
Pseudomonas bacteriophage ϕKZ contains an inner body in its capsid
V.N. KRYLOV, T.A. SMIRNOVA, I.B. MINENKOVA, T.G. PLOTNIKOVA, I.Z. ZHAZIKOV, and E.A. KHRENOVA 758

Poindexter, J.S.
Selection for moderately halophilic bacteria by gradual salinity increases
A. VENTOSA, F. RODRIGUEZ-VALERA, J.S. POINDEXTER, and W.S. REZNIKOFF 1279

Pollack, J.H.
Morphogenesis of arthroconidiation in the dermatophyte *Trichophyton mentagrophytes* with special reference to wall ontogeny
TADAYO HASHIMOTO, R.G. EMYANITOFF, R.C. MOCK, and J.H. POLLACK 1415

Port, J.L.
Sulphur acquisition by *Neisseria meningitidis*
J.L. PORT, I.W. DEVOE, and F.S. ARCHIBALD 1453

Proctor, R.A.
Inefficient *in vitro* killing of virulent or nonvirulent *Salmonella typhimurium* by murine polymorphonuclear neutrophils
ELLEN JO BARON and RICHARD A. PROCTOR 1264

Pueppke, S.G.
Adsorption of tumorigenic *Agrobacterium tumefaciens* cells to susceptible potato tuber tissues
STEVEN G. PUEPPKE and ULLA K. BENNY 1030

Pujarniscle, S.
Purification and properties of the proteinase produced *in vitro* by *Verticillium dahliae*
FRANÇOIS LAMBERT and SERGE PUJARNISCLE 1488

Purkayastha, R.P.
Role of rhizobitoxine in protecting soybean roots from *Macrophomina phaseolina* infection
USHA CHAKRABORTY and R.P. PURKAYASTHA 285

Qadri, S.M.H.
Rapid detection of methicillin-resistant staphylococci with the MS-2 system
D.J. FLOURNOY, S.M. HUSSAIN QADRI, and W.STEVE JOHNSON 488

Rafrafi, J.
Ecological distribution of *Legionellaceae* in the Quebec city area
JEAN R. JOLY, MAURICE BOISSINOT, JEAN DUCHAINE, MARIE DUVAL, JAMEL RAFRAFI, DANIELLE RAMSAY, and ROBERT LETARTE 63

Rajagopal, B.S.
Metabolism of carbaryl and carbofuran by soil-enrichment and bacterial cultures
B.S. Rajagopal, V.R. Rao, G. Nagendrappa, and N. Sethunathan 1458

Ramsay, D.
Ecological distribution of *Legionellaceae* in the Quebec city area
Jean R. Joly, Maurice Boissinot, Jean Duchaine, Marie Duval, Jamel Rafrafi, Danielle Ramsay, and Robert Letarte 63

Rao, V.R.
Metabolism of carbaryl and carbofuran by soil-enrichment and bacterial cultures
B.S. Rajagopal, V.R. Rao, G. Nagendrappa, and N. Sethunathan 1458

Raphael, R.A.
Rotavirus survival in conventionally treated drinking water
S.A. Sattar, R.A. Raphael, and V.S. Springthorpe 653

Raub, T.J.
The microcyst wall of *Didymium iridis*: chemical analyses
Thomas J. Raub 162

Ravelojoana, A.M.
The parasexual cycle in the entomophathogenic fungus *Paecilomyces fumoso-roseus* (Wize) Brown and Smith
Guy Riba and Anne M. Ravelojoana 922

Rawls, W.E.
Reversion of mutations in the thymidine kinase gene in herpes simplex viruses resistant to phosphonoacetate
J. Campione-Piccardo and W.E. Rawls 56¢

Razniewska, T.
An assay for the measurement of the protein content of cells immobilized in carrageenan
A. Jones, T. Razniewska, B.H. Lesser, R. Siqueira, D. Berk, L.A. Behie, and G.M. Gaucher 475

Regué, M.
PI bacteriophage and tellurite sensitivity in *Klebsiella pneumoniae* and *Escherichia coli*
Juan Tomás, Miguel Regué, Ramón Parés, Juan Jofre, and William W. Kay 830

Remsen, C.C.
Quantitative changes in fungal colony-forming units in the surface microlayers of two freshwater ponds
J.S. Maki, S.C. Danos, and C.C Remsen 578

Renaudin, S.
Analyse ultrastructurale et biochimique de mutants pléiotropes de *Bacillus subtilis* affectés dans le contrôle de la sporulation
Joseph Zucca et Serge Renaudin 1367

Renganathan, V.
Metabolism of structurally modified acyclic monoterpenes by *Pseudomonas incognita*
V. Renganathan and K. Madhava Madyastha 637

Metabolism of α-terpineol by *Pseudomonas incognita*
K. Madhava Madyastha and V. Renganathan 1429

Rennie, D.A.
Erratum: Techniques for quantifying N_2 fixation in association with nonlegumes under field and greenhouse conditions
R.J. Rennie and D.A. Rennie 519

Rennie, R.J.
Erratum: Techniques for quantifying N_2 fixation in association with nonlegumes under field and greenhouse conditions
R.J. Rennie and D.A. Rennie 519

Reyes, V.G.
The influence of high temperatures on the growth and survival of *Rhizobium* spp. in peat inoculants during preparation, storage, and distribution
P. Somasegaran, V.G. Reyes, and H.J. Hoben 23

Reznikoff, W.S.
Selection for moderately halophilic bacteria by gradual salinity increases
A. Ventosa, F. Rodriguez-Valera, J.S. Poindexter, and W.S. Reznikoff 1279

Riba, G.
The parasexual cycle in the entomophathogenic fungus *Paecilomyces fumoso-roseus* (Wize) Brown and Smith
Guy Riba and Anne M. Ravelojoana 922

Rice, W.A.
Minimal antigenic characterization of eight *Rhizobium meliloti* strains by indirect enzyme-linked immunosorbent assay (ELISA)
P.E. Olsen and W.A. Rice 1093

ELISA evaluation of the competitive abilities of two *Rhizobium meliloti* strains
W.A. Rice, P.E. Olsen, and W.J. Page 1187

Richet, H.
Rapid screening for bacteriuria with a laser nephelometer
Paul Bayardelle and Hervé Richet 927

Roberts, K.R.
Polyphosphate body and acid phosphatase localization in *Nostoc* sp.
John D. DuBois, Keith R. Roberts, and Lawrence A. Kapustka 8

Rodríguez, C.
The growth characteristics of *Saccharomycopsis lipolytica*: morphology and induction of mycelium formation
Carmina Rodríguez and Angel Domínguez 605

Rodriguez-Valera, F.
Selection for moderately halophilic bacteria by gradual salinity increases
A. Ventosa, F. Rodriguez-Valera, J.S. Poindexter, and W.S. Reznikoff 1279

Rogel, R.
Transduction of bacteriophage resistance in *Streptococcus pyogenes* with coinfection lysates of the virulent phage $A25_{ts1-2}$ and a temperate bacteriophage 2511
James G. Stuart, Rene Rogel, and Tom Morton 1309

Röhr, M.
Pyruvate kinase from *Aspergillus niger*: a regulatory enzyme in glycolysis?
Bibiana Meixner-Monori, Christian P. Kubicek, and Max Röhr 16

Xylose metabolism in *Pachysolen tannophilus:* purification and properties of xylose reductase
GÜNTHER DITZELMÜLLER, CHRISTIAN P. KUBICEK, WILFRIED WÖHRER, and MAX RÖHR 1330

Romano, P.
Flocculation of wine yeasts: frequency, differences, and stability of the character
GIOVANNA SUZZI, PATRIZIA ROMANO, and CARLO ZAMBONELLI 36

Romanowska, E.
Characterization of anti-*Citrobacter* 036 specific polysaccharide monoclonal antibodies
P.J. SHEARMAN, D.R. BUNDLE, E. ROMANOWSKA, C. LUGOWSKI, and M. BOGULSKA 91

Roop, R.M., II
Differential characteristics of catalase-positive campylobacters correlated with DNA homology groups
R. MARTIN ROOP II, ROBERT M. SMIBERT, JOHN L. JOHNSON, and NOEL R. KRIEG 938

Rosendal, S.
Porcine haemophili and actinobacilli: characterization by means of API test strips and possible taxonomic implications
T. O'REILLY, S. ROSENDAL, and D.F. NIVEN 1229

Rosenzweig, W.D.
Role of amino acids, peptides, and medium composition in trap formation by nematode-trapping fungi
WILLIAM D. ROSENZWEIG 265

Influence of soil microorganisms on the trapping of nematodes by nematophagous fungi
W.D. ROSENZWEIG and D. ACKROYD 1437

Roszak, D.B.
Viable but nonrecoverable stage of *Salmonella enteritidis* in aquatic systems
D.B. ROSZAK, D.J. GRIMES, and R.R. COLWELL 334

Roth, L.A.
Death rates of obligate anaerobes exposed to oxygen and the effect of media prereduction on cell viability
G.B. PATEL, L.A. ROTH, and B.J. AGNEW 228

Rothrock, C.S.
Role of antibiosis in antagonism of *Streptomyces hygroscopicus* var. *geldanus* to *Rhizoctonia solani* in soil
CRAIG S. ROTHROCK and DAVID GOTTLIEB 1440

Royse, D.J.
Phenotypic traits of fluorescent pseudomonads causing bacterial blotch of *Agaricus bisporus* mushrooms and other mushroom-derived fluorescent pseudomonads
P.A. ZARKOWER, P.J. WUEST, D.J. ROYSE, and B. MYERS 360

Rudd, J.W.M.
A method for measuring the response of sediment microbial communities to environmental perturbations
AKIRA FURUTANI, JOHN W.M. RUDD, and C.A. KELLY 1408

Rupérez, P.
Acidic exopolysaccharide from *Penicillium allahabadense*
P. RUPÉREZ, B. GOMEZ-MIRANDA, and J.A. LEAL 1157

Russell, N.J.
The isolation and characterisation of cytoplasmic and outer membranes from *Micrococcus cryophilus*
GEOFFREY M. LLOYD and NICHOLAS J. RUSSELL 1357

Ryan, A.
Serotype distribution of meningococci isolated in South Australia 1971 through 1980
F.E. ASHTON, A. RYAN, B.B. DIENA, and D. HANSMAN 1289

Saddler, J.N.
Conversion of pretreated lignocellulosic substrates to ethanol by *Clostridium thermocellum* in mono- and co-culture with *Clostridium thermosaccharolyticum* and *Clostridium thermohydrosulphuricum*
J.N. SADDLER and M.K.-H. CHAN 212

Safferman, R.S.
Comparison of commercial beef extracts and similar materials for recovering viruses from environmental samples
CHRISTON J. HURST, DANIEL R. DAHLING, ROBERT S. SAFFERMAN, and TAMARA GOYKE 1253

Saheb, S.A.
Preliminary characterization of inhibitors of *Neisseria gonorrhoeae* produced *in vitro* by *Eubacterium limosum*
A. MORIN, J.-G. BISAILLON, R. BEAUDET, M. SYLVESTRE, S.A. SAHEB, and D. LEDUC 251

Salit, I.E.
Experimental meningococcal infection in neonatal animals: models for mucosal invasiveness
IRVING E. SALIT, ELAINE VAN MELLE, and LEWIS TOMALTY 1022

Experimental meningococcal infection in neonatal mice: differences in virulence between strains isolated from human cases and carriers
IRVING E. SALIT and LEWIS TOMALTY 1042

Sandhu, D.K.
Production and localization of β-glucosidase in *Trichoderma harzianum* and some aspects of catabolite repression
MOHINDERJIT S. SIDHU and DHANWANT K. SANDHU 1377

Sasarman, A.
Construction of a shuttle vector and expression in *Streptomyces lividans* of the sulfonamide-resistance gene derived from *Escherichia coli* plasmid pSAS1206
F. SHARECK, A. SASARMAN, and C. VÉZINA 515

Sashihara, N.
Cellulases of an alkalophilic *Bacillus* strain isolated from soil
K. HORIKOSHI, M. NAKAO, Y. KURONO, and N. SASHIHARA 774

Sattar, A.
Production of fumigaclavine A by *Aspergillus tamarii* Kita.
K.K. JANARDHANAN, ABDUL SATTAR, and AKHTAR HUSAIN 247

Sattar, S.A.
Virological examination of drinking water: a Canadian collaborative study
PIERRE PAYMENT, MICHEL TRUDEL, S.A. SATTAR, V.S. SPRINGTHORPE, T.P. SUBRAHMANYAN, B.E. GREGORY, A.H. VAJDIC, P. BLASKOVIC, I.J. GUGLIELMI, and O. KUDREWKO 105

Rotavirus survival in conventionally treated drinking water
S.A. SATTAR, R.A. RAPHAEL, and V.S. SPRINGTHORPE 653

Scheld, W.M.
In vitro binding of *Candida albicans* yeast cells to human fibronectin
KATHERINE G. SKERL, RICHARD A. CALDERONE, ESTHER SEGAL, T. SREEVALSAN, and W. MICHAEL SCHELD 221

Schellhorn, H.E.
Multiplicity of extracellular β-(1,4)-endoglucanases of *Bacteroides succinogenes* S85
H.E. SCHELLHORN and C.W. FORSBERG 930

Scher, F.M.
A method for assessing the root-colonizing capacity of bacteria on maize
F.M. SCHER, J.S. ZIEGLE, and J.W. KLOEPPER 151

Effect of synthetic iron chelates on population densities of *Fusarium oxysporum* and the biological control agent *Pseudomonas putida* in soil
F.M. SCHER, M. DUPLER, and R. BAKER 1271

Schink, B.
Ecology of aerobic hydrogen-oxidizing bacteria in two freshwater lake ecosystems
BERNHARD SCHINK and J.G. ZEIKUS 260

Schippers, B.
Ammonia-induced mycostasis is not mediated by enhanced release of carbon compounds
H.J.M. LÖFFLER and B. SCHIPPERS 1038

Schisler, D.A.
Evidence for the involvement of the soil microbiota in the exclusion of *Fusarium* from coniferous forest soils
DAVID A. SCHISLER and R.G. LINDERMAN 142

Schmidt, E.L.
Examination of an acid forest soil for ammonia- and nitrite-oxidizing autotrophic bacteria
T.R. HANKINSON and E.L. SCHMIDT 1125

Schroth, M.N.
Use of DNA hybridization values to construct three-dimensional models of fluorescent pseudomonad relationships
D.C. HILDEBRAND, O.C. HUISMAN, and M.N. SCHROTH 306

Sedlaczek, L.
Protoplast release from fungi capable of steroid transformation
J. DLUGOŃSKI, L. SEDLACZEK, and A. JAWORSKI 57

Segal, E.
In vitro binding of *Candida albicans* yeast cells to human fibronectin
KATHERINE G. SKERL, RICHARD A. CALDERONE, ESTHER SEGAL, T. SREEVALSAN, and W. MICHAEL SCHELD 221

Adherence of *Candida albicans* to buccal and vaginal epithelial cells: ultrastructural observations
RICHARD A. CALDERONE, NURITH LEHRER, and ESTHER SEGAL 1001

Sekeri-Pataryas, K.H.
Differential mechanisms for liposome uptake by vegetative and aggregation competent cells of *Dictyostelium discoideum*
K.H. SEKERI-PATARYAS and C. VAKIRTZI-LEMONIAS 1216

Semple, K.M.
Oil-degrading capabilities of yeasts and fungi isolated from coastal marine environments
P.M. FEDORAK, K.M. SEMPLE, and D.W.S. WESTLAKE 565

Sengupta, S.
The production of extracellular endo-α-mannanase by the mushroom *Volvariella volvacea*
SUMAN KHOWALA and S. SENGUPTA 657

Seo, J.S.
Positive serological evidence that Hantaan virus, the etiologic agent of hemorrhagic fever with renal syndrome, is endemic in Canada
HO WANG LEE, IN WHA SEONG, LUCK JU BAEK, DONALD A. MCLEOD, JEONG SUN SEO, and C. YONG KANG 1137

Seong, I.W.
Positive serological evidence that Hantaan virus, the etiologic agent of hemorrhagic fever with renal syndrome, is endemic in Canada
HO WANG LEE, IN WHA SEONG, LUCK JU BAEK, DONALD A. MCLEOD, JEONG SUN SEO, and C. YONG KANG 1137

Sethunathan, N.
Metabolism of carbaryl and carbofuran by soil-enrichment and bacterial cultures
B.S. RAJAGOPAL, V.R. RAO, G. NAGENDRAPPA, and N. SETHUNATHAN 1458

Shahrabadi, M.S.
Interaction of *Clostridium difficile* toxin A with L cells in culture
M.S. SHAHRABADI, L.E. BRYAN, and P.W.K. LEE 874

Shantharam, S.
Binding between pole bean (*Phaseolus vulgaris* L.) lectin and rhizobia that do or do not nodulate the pole bean
PETER P. WONG and S. SHANTHARAM 1349

Shapiro, S.
Suppression of nitrate utilization by ammonium and its relationship to chloramphenicol production in *Streptomyces venezuelae*
S. SHAPIRO and L.C. VINING 798

Excretion of α-keto acids by strains of *Streptomyces venezuelae*
ZIA U. AHMED, S. SHAPIRO, and L.C. VINING 1014

Shareck, F.
Construction of a shuttle vector and expression in *Streptomyces lividans* of the sulfonamide-resistance gene derived from *Escherichia coli* plasmid pSAS1206
F. SHARECK, A. SASARMAN, and C. VÉZINA 515

Shearman, P.J.
Characterization of anti-*Citrobacter* 036 specific polysaccharide monoclonal antibodies
P.J. SHEARMAN, D.R. BUNDLE, E. ROMANOWSKA, C. LUGOWSKI, and M. BOGULSKA 91

Shinoda, S.
Lateral flagellum of *Vibrio fluvialis*: a species-specific antigen
SUMIO SHINODA, NORIKO NAKAHARA, and HARUAKI KANE 1525

Sidhu, M.S.
Production and localization of β-glucosidase in *Trichoderma harzianum* and some aspects of catabolite repression
MOHINDERJIT S. SIDHU and DHANWANT K. SANDHU 1377

Silva, M.T.
A turbidimetric and electron microscopic study of the effects of several parameters on the lysis of *Streptococcus faecalis* by lysozyme
M. Egídia Carvalho, M. Helena Gonçalves, and M.T. Silva **905**

Simões-Mendes, B.
Purification and characterization of the extracellular amylases of the yeast *Schwanniomyces alluvius*
B. Simões-Mendes **1163**

Simonet, P.
An improved method for lysis of *Frankia* with achromopeptidase allows detection of new plasmids
Pascal Simonet, Andre Capellano, Elisabeth Navarro, Rene Bardin, and Andre Moiroud **1292**

Singh, V.K.
Cells from newborn rat brain established in primary tissue culture will support rubella virus replication
Diane Van Alstyne, Elie M. Smyrnis, and Vijendra K. Singh **961**

Siqueira, R.
An assay for the measurement of the protein content of cells immobilized in carrageenan
A. Jones, T. Razniewska, B.H. Lesser, R. Siqueira, D. Berk, L.A. Behie, and G.M. Gaucher **475**

Skerl, K.G.
In vitro binding of *Candida albicans* yeast cells to human fibronectin
Katherine G. Skerl, Richard A. Calderone, Esther Segal, T. Sreevalsan, and W. Michael Scheld **221**

Skomurski, J.F.
Differential scanning calorimetry of membranes isolated from *Bacillus megaterium* spores
J.C. Vary, J.F. Skomurski, and B.A. Cornell **854**

Smibert, R.M.
Differential characteristics of catalase-positive campylobacters correlated with DNA homology groups
R. Martin Roop II, Robert M. Smibert, John L. Johnson, and Noel R. Krieg **938**

Smirnova, T.A.
Pseudomonas bacteriophage ϕKZ contains an inner body in its capsid
V.N. Krylov, T.A. Smirnova, I.B. Minenkova, T.G. Plotnikova, I.Z. Zhazikov, and E.A. Khrenova **758**

Smyrnis, E.M.
Cells from newborn rat brain established in primary tissue culture will support rubella virus replication
Diane Van Alstyne, Elie M. Smyrnis, and Vijendra K. Singh **961**

Snoddy, C.B.
Comparative pathogenicity of auxotrophic mutants of *Candida albicans*
Marcia Manning, Christina B. Snoddy, and Robert A. Fromtling **31**

Somasegaran, P.
The influence of high temperatures on the growth and survival of *Rhizobium* spp. in peat inoculants during preparation, storage, and distribution
P. Somasegaran, V.G. Reyes, and H.J. Hoben **23**

Sørensen, J.
Nitrous oxide production from nitrification and denitrification in marine sediment at low oxygen concentrations
Kirsten Schannong Jørgensen, Hanne Beck Jensen, and Jan Sørensen **1073**

Sowden, L.C.
Methanogenesis in the absence of intracytoplasmic membranes
G.D. Sprott, L.C. Sowden, J.R. Colvin, K.F. Jarrell, and T.J. Beveridge **594**

Springthorpe, V.S.
Virological examination of drinking water: a Canadian collaborative study
Pierre Payment, Michel Trudel, S.A. Sattar, V.S. Springthorpe, T.P. Subrahmanyan, B.E. Gregory, A.H. Vajdic, P. Blaskovic, I.J. Guglielmi, and O. Kudrewko **105**

Rotavirus survival in conventionally treated drinking water
S.A. Sattar, R.A. Raphael, and V.S. Springthorpe **653**

Sprott, G.D.
Methanogenesis in the absence of intracytoplasmic membranes
G.D. Sprott, L.C. Sowden, J.R. Colvin, K.F. Jarrell, and T.J. Beveridge **594**

Intracellular potassium concentration and relative acidity of the ribosomal proteins of methanogenic bacteria
K.F. Jarrell, G.D. Sprott, and A.T. Matheson **663**

Sreevalsan, T.
In vitro binding of *Candida albicans* yeast cells to human fibronectin
Katherine G. Skerl, Richard A. Calderone, Esther Segal, T. Sreevalsan, and W. Michael Scheld **221**

Stanley, P.M.
Erratum: Factors affecting the irreversible attachment of *Pseudomonas aeruginosa* to stainless steel
Patricia M. Stanley **719**

Stanton, T.B.
Glucose metabolism of *Treponema bryantii*, an anaerobic rumen spirochete
Thad B. Stanton **526**

Steiner, B.M.
Oxygen toxicity in *Treponema pallidum*: deoxyribonucleic acid single-stranded breakage induced by low doses of hydrogen peroxide
Bret M. Steiner, Grace H.W. Wong, Pramod Sutrave, and Stephen Graves **1467**

Stewart, C.S.
Polyacrylamide gel electrophoresis of *Bacteroides succinogenes*
R. Begbie and C.S. Stewart **863**

Stewart, G.G.
Effects of pretreatments with sulfhydryls and alkylating agents on spheroplast formation from *Schwanniomyces* species
T.M. Dowhanick, C.J. Panchal, and G.G. Stewart **368**

Straus, N.
The nucleotide sequence homologies of unique DNA's of some cultivated and wild mushrooms
PAUL A. HORGEN, RICHARD ARTHUR, OLIA DAVY, ANN MOUM, FRANK HERR, NEIL STRAUS, and JAMES ANDERSON 587

Stuart, J.G.
Transduction of bacteriophage resistance in *Streptococcus pyogenes* with coinfection lysates of the virulent phage $A25_{N1-2}$ and a temperate bacteriophage 2511
JAMES G. STUART, RENE ROGEL, and TOM MORTON 1309

Stutz, J.C.
Virulence differences of *Fusarium roseum* isolates in red clover roots not explained by phytotoxins activity
J.C. STUTZ, K.T. LEATH, and F.L. LUKEZIC 1494

Subba Rao, D.V.
Conical spinae associated with a picoplanktonic procaryote
K.B. EASTERBROOK and D.V. SUBBA RAO 716

Subrahmanyan, T.P.
Virological examination of drinking water: a Canadian collaborative study
PIERRE PAYMENT, MICHEL TRUDEL, S.A. SATTAR, V.S. SPRINGTHORPE, T.P. SUBRAHMANYAN, B.E. GREGORY, A.H. VAJDIC, P. BLASKOVIC, I.J. GUGLIELMI, and O. KUDREWKO 105

Suhara, Y.
Microbial resolution of DL-*N*-benzyloxycarbonyl-*p*-hydroxyphenylglycine by *Streptomyces zaomyceticus*
Y. SUHARA, SAYURI ITOH, KAZUTERU YOKOSE, RIEKO NINOMIYA, KIMIHIRO WATANABE, and HIROMI B. MARUYAMA 1301

Sun, D.
A catabolite-resistance mutation is localized in the *rpo* operon of *Bacillus subtilis*
DONGXU SUN and I. TAKAHASHI 423

Effect of various inhibitors on sporulation of *Bacillus subtilis crs* mutants
I. TAKAHASHI and DONGXU SUN 1337

Sutrave, P.
Oxygen toxicity in *Treponema pallidum*: deoxyribonucleic acid single-stranded breakage induced by low doses of hydrogen peroxide
BRET M. STEINER, GRACE H.W. WONG, PRAMOD SUTRAVE, and STEPHEN GRAVES 1467

Suzzi, G.
Flocculation of wine yeasts: frequency, differences, and stability of the character
GIOVANNA SUZZI, PATRIZIA ROMANO, and CARLO ZAMBONELLI 36

Sylvestre, M.
Preliminary characterization of inhibitors of *Neisseria gonorrhoeae* produced *in vitro* by *Eubacterium limosum*
A. MORIN, J.-G. BISAILLON, R. BEAUDET, M. SYLVESTRE, S.A. SAHEB, and D. LEDUC 251

Takahashi, I.
A catabolite-resistance mutation is localized in the *rpo* operon of *Bacillus subtilis*
DONGXU SUN and I. TAKAHASHI 423

Effect of various inhibitors on sporulation of *Bacillus subtilis crs* mutants
I. TAKAHASHI and DONGXU SUN 1337

Takahashi, M.
Acetic, propionic, and oleic acid as the possible factors influencing the predominant residence of some species of *Propionibacterium* and coagulase-negative *Staphylococcus* on normal human skin
TSUTOMU USHIJIMA, MEGUMI TAKAHASHI, and YOSHIKATSU OZAKI 647

Takats, S.T.
Penicillin sensitivity of nodulation in soybean roots
S.T. TAKATS 77

Takemaru, T.
Effects of sugars and polyols on basidiocarp formation in a phosphoglucose isomerase mutant of *Coprinus cinereus*
HIROSHI NYUNOYA, TSUNEO TAKEMARU, and TATSUO ISHIKAWA 45

Tallim, S.R.
Evaluation of D-xylose fermenting yeasts for utilization of a wood-derived hemicellulose hydrolysate
JARED E. FEIN, S. RADIG TALLIM, and G. ROSS LAWFORD 682

Tannock, G.W.
The derivation and use of mice which do not harbour lactobacilli in the gastrointestinal tract
G.W. TANNOCK and R.D. ARCHIBALD 849

Taylor, A.
The antibacterial activity of some naturally occurring 2,5-dihydroxy-1,4-benzoquinones
D. BREWER, W.-C. JEN, G.A. JONES, and A. TAYLOR 1068

Tershak, D.R.
In vivo proteins of defective interfering particles of poliovirus
DANIEL R. TERSHAK 461

Thibeault, D.
Triggering in unactivated *Bacillus megaterium* spores
DORIS THIBEAULT and GERALD M. LEFEBVRE 997

Thompson, D.P.
Extracellular enzyme production by *Rhizopus* and *Mucor* species on solid media
D.P. THOMPSON and BRODERICK E. ERIBO 126

Tikhonenko, A.S.
Bacillus mycoides phages and their satellites
ANNA S. TIKHONENKO, NINA N. BELYAEVA, and ANNA F. KRETOVA 691

Tomalty, L.
Experimental meningococcal infection in neonatal animals: models for mucosal invasiveness
IRVING E. SALIT, ELAINE VAN MELLE, and LEWIS TOMALTY 1022

Experimental meningococcal infection in neonatal mice: differences in virulence between strains isolated from human cases and carriers
IRVING E. SALIT and LEWIS TOMALTY 1042

Tomás, J.
PI bacteriophage and tellurite sensitivity in *Klebsiellla pneumoniae* and *Escherichia coli*
JUAN TOMÁS, MIGUEL REGUÉ, RAMÓN PARÉS, JUAN JOFRE, and WILLIAM W. KAY 830

Tomás, J.M.
Tricarboxylate transport in a Cit^+ *Escherichia coli*: evidence for the role of an outer membrane protein
JUAN. M. TOMÁS and WILLIAM W. KAY 916

Tomlinson, G.A.
The growth of *Paracoccus halodenitrificans* in a defined medium
LAWRENCE I. HOCHSTEIN and GERALDINE A. TOMLINSON 837

Tong, N.
Composition chimique et ultrastructure des parois des corps hyphaux et des azygospores de *Conidiobolus obscurus*
J.P. LATGÉ, B. FOURNET, G. COLE, D. DUBOURDIEU et N. TONG 1507

Torrey, J.G.
Levels of trehalose and glycogen in *Frankia* sp. HFPArI3 (Actinomycetales)
MARY F. LOPEZ, MARK S. FONTAINE, and JOHN G. TORREY 746

Trudel, M.
Virological examination of drinking water: a Canadian collaborative study
PIERRE PAYMENT, MICHEL TRUDEL, S.A. SATTAR, V.S. SPRINGTHORPE, T.P. SUBRAHMANYAN, B.E. GREGORY, A.H. VAJDIC, P. BLASKOVIC, I.J. GUGLIELMI, and O. KUDREWKO 105

Erratum: A survey of enteric viruses in domestic sewage
PIERRE PAYMENT, REDA AYACHE, and MICHEL TRUDEL 272

Trust, T.J.
Characterization of the surface antigens of the marine fish pathogens *Vibrio anguillarum* and *Vibrio ordalii*
HENRIK CHART and TREVOR J. TRUST 703

Erratum: Characterization of the surface antigens of the marine fish pathogens *Vibrio anguillarum* and *Vibrio ordalii*
HENRIK CHART and TREVOR J. TRUST 1195

Turian, G.
Microcycle conidiation induced by partial nitrogen deprivation in *Neurospora crassa*
R. GUIGNARD, F. GRANGE, and G. TURIAN 1210

Tyler, M.G.
Sulfur isotope fractionation during SO_3^{2-} reduction by different clostridial species
E.J. LAISHLEY, M.G. TYLER, and H.R. KROUSE 841

Ushijima, T.
Acetic, propionic, and oleic acid as the possible factors influencing the predominant residence of some species of *Propionibacterium* and coagulase-negative *Staphylococcus* on normal human skin
TSUTOMU USHIJIMA, MEGUMI TAKAHASHI, and YOSHIKATSU OZAKI 647

Usui, Y.
Effects of fibronectin on the compact colony formation in staphylococci
YUKIO USUI, YUKIO OHSHIMA, and KOSAKU YOSHIDA 419

Vadeboncoeur, C.
Structure and properties of the phosphoenolpyruvate: glucose phosphotransferase system of oral streptococci
CHRISTIAN VADEBONCOEUR 495

Vajdic, A.H.
Virological examination of drinking water: a Canadian collaborative study
PIERRE PAYMENT, MICHEL TRUDEL, S.A. SATTAR, V.S. SPRINGTHORPE, T.P. SUBRAHMANYAN, B.E. GREGORY, A.H. VAJDIC, P. BLASKOVIC, I.J. GUGLIELMI, and O. KUDREWKO 105

Vakirtzi-Lemonias, C.
Differential mechanisms for liposome uptake by vegetative and aggregation competent cells of *Dictyostelium discoideum*
K.H. SEKERI-PATARYAS and C. VAKIRTZI-LEMONIAS 1216

Valenta, J.R.
The effect of aculeacin A and papulacandin B on morphology and cell wall ultrastructure in *Candida albicans*
J.J. BOZZOLA, R.J. MEHTA, L.J. NISBET, and J.R. VALENTA 857

Valero-Guillén, P.L.
Nocardia in soils of southeastern Spain: abundance, distribution, and chemical characterisation
P.L. VALERO-GUILLÉN and F. MARTÍN-LUENGO 1088

Vallespir, S.
Specificity of subcellular distribution of alkaline phosphatase in *Bacillus licheniformis* 749/C
ARATI GHOSH, STEVE VALLESPIR, and B.K. GHOSH 113

Van Alstyne, D.
Cells from newborn rat brain established in primary tissue culture will support rubella virus replication
DIANE VAN ALSTYNE, ELIE M. SMYRNIS, and VIJENDRA K. SINGH 961

Van Buren, J.
Seroepidemiology of Q fever in Nova Scotia and Prince Edward Island
THOMAS J. MARRIE, JOHN VAN BUREN, RUTH S. FAULKNER, E. VANORA HALDANE, JAMES C. WILLIAMS, and CAROL KWAN 129

van den Berg, L.
Developments in methanogenesis from industrial waste water
L. VAN DEN BERG 975

Vanderwel, D.
Properties of cell wall peptidoglycan synthesized by amino acid deprived *relA* mutants of *Escherichia coli*
DÉSIRÉE VANDERWEL and EDWARD E. ISHIGURO 1239

Van Leusden, F.M.
Evaluation of a pour-plate system with a rabbit plasma – bovine fibrinogen agar for the enumeration of *Staphylococcus aureus* in food
H.J. BECKERS, F.M. VAN LEUSDEN, O. BINDSCHEDLER, and D. GUERRAZ 470

Van Melle, E.
Experimental meningococcal infection in neonatal animals: models for mucosal invasiveness
IRVING E. SALIT, ELAINE VAN MELLE, and LEWIS TOMALTY 1022

Vary, J.C.
Differential scanning calorimetry of membranes isolated from *Bacillus megaterium* spores
J.C. VARY, J.F. SKOMURSKI, and B.A. CORNELL **854**

Veiga, L.A.
Induction and repression of L-fucose dehydrogenase of *Pullularia pullulans*
P.F. CONTER, M.F. GUIMARÃES, and L.A. VEIGA **753**

Veillet-Poncet, L.
Essai de mise en évidence d'une activité protéolytique d'origine intracellulaire chez *Aeromonas hydrophila LP 50*
FRANÇOISE DENIS et LOUISE VEILLET-PONCET **1190**

Ventosa, A.
Selection for moderately halophilic bacteria by gradual salinity increases
A. VENTOSA, F. RODRIGUEZ-VALERA, J.S. POINDEXTER, and W.S. REZNIKOFF **1279**

Venugopal, M.N.
Levels of *Vibrio parahaemolyticus* in Indian shrimp undergoing processing for export
I. KARUNASAGAR, M.N. VENUGOPAL, and INDRANI KARUNASAGAR **713**

Vézina, C.
Construction of a shuttle vector and expression in *Streptomyces lividans* of the sulfonamide-resistance gene derived from *Escherichia coli* plasmid pSAS1206
F. SHARECK, A. SASARMAN, and C. VÉZINA **515**

Vining, L.C.
Suppression of nitrate utilization by ammonium and its relationship to chloramphenicol production in *Streptomyces venezuelae*
S. SHAPIRO and L.C. VINING **798**

Excretion of α-keto acids by strains of *Streptomyces venezuelae*
ZIA U. AHMED, S. SHAPIRO, and L.C. VINING **1014**

Vishniac, H.S.
25S ribosomal RNA homologies of basidiomycetous yeasts: taxonomic and phylogenetic implications
SIAVASH BAHARAEEN and HELEN S. VISHNIAC **613**

Erratum: Complementary DNA − 25S ribosomal RNA hybridization: an improved method for phylogenetic studies
SIAVASH BAHARAEEN, ULRICH MELCHER, and HELEN S. VISHNIAC **719**

Vishnubhatla, I.
Adaptational changes in *Staphylococcus aureus* MF 31 grown above its maximum growth temperature when protected by sodium chloride: lipid studies
A. HURST, ESTHER OFORI, INDIRA VISHNUBHATLA, and M. KATES **1424**

Voll, M.J.
Serology and plasmid carriage in *Vibrio cholerae*
J.W. NEWLAND, M.J. VOLL, and L.A. MCNICOL **1149**

Walker, R.I.
In vivo protection of penicillin-susceptible *Bacteroides melaninogenicus* from penicillin by facultative bacteria which produce beta-lactamase
ITZHAK BROOK, GARRY PAZZAGLIA, JAMES C. COOLBAUGH, and RICHARD I. WALKER **98**

Walker, R.I.
In vitro and *in vivo* pathologic effects of *Vibrio parahaemolyticus* on human epithelial cells
B.R. MERRELL, R.I. WALKER, and S.W. JOSEPH **381**

Waring, M.J.
Directed biosynthesis of novel derivatives of echinomycin by *Streptomyces echinatus*. I. Effect of exogenous analogues of quinoxaline-2-carboxylic acid on the fermentation
D. GAUVREAU and M.J. WARING **439**

Studies on antibiotic biosynthesis by protoplasts and resting cells of *Streptomyces echinatus*. Part I. The synthesis of echinomycin
D. GAUVREAU and M.J. WARING **721**

Directed biosynthesis of novel derivatives of echinomycin. II. Purification and structure elucidation
D. GAUVREAU and M.J. WARING **730**

Watanabe, K.
Microbial resolution of DL-*N*-benzyloxycarbonyl-*p*-hydroxyphenylglycine by *Streptomyces zaomyceticus*
Y. SUHARA, SAYURI ITOH, KAZUTERU YOKOSE, RIEKO NINOMIYA, KIMIHIRO WATANABE, and HIROMI B. MARUYAMA **1301**

Watrud, L.S.
Sporulation of *Gigaspora margarita* on root cultures of tomato
M.A. MILLER-WIDEMAN and L.S. WATRUD **642**

Wessman, G.E.
Nutritional factors affecting the synthesis of an antiphagocytic factor by group E streptococci
G.E. WESSMAN **406**

West, T.P.
Protein synthesis in germinating *Saccharomyces cerevisiae* ascospores
ROBERT L. ARMSTRONG, THOMAS P. WEST, and PAUL T. MAGEE **345**

Westlake, D.W.S.
Oil-degrading capabilities of yeasts and fungi isolated from coastal marine environments
P.M. FEDORAK, K.M. SEMPLE, and D.W.S. WESTLAKE **565**

Wheeler, R.
Experimental studies of the pathogenesis of infections due to *Pseudomonas aeruginosa*: elastase, an IgG protease
IAN ALAN HOLDER and ROBERT WHEELER **1118**

Wicklow, D.T.
Degradation of lignocellulose in wheat straw versus hardwood by *Cyathus* and related species (Nidulariaceae)
D.T. WICKLOW, R. LANGIE, S. CRABTREE, and R.W. DETROY **632**

Willer, D.W.
Pyruvate carboxylase from *Thiobacillus novellus*: properties and possible function
A.M. CHARLES and D.W. WILLER **532**

Willetts, H.J.
A histochemical study of sclerotia of *Botrytis cinerea* and *Botrytis fabae*
D. BACKHOUSE and H.J. WILLETTS **171**

Williams, G.L.
The effects of the insecticide acephate on the growth and nutrient uptake of an aquatic bacterium
G.L. Williams and L.J. Albright 375

Williams, H.N.
Distribution of bdellovibrios in the water column of an estuary
Henry N. Williams and William A. Falkler, Jr. 971

Williams, J.C.
Seroepidemiology of Q fever in Nova Scotia and Prince Edward Island
Thomas J. Marrie, John Van Buren, Ruth S. Faulkner, E. Vanora Haldane, James C. Williams, and Carol Kwan 129

Williams, R.E.
Immunological and enzymatic properties of the *Desulfovibrio desulfuricans* hydrogenase
E. Ziomek, W.G. Martin, and R.E. Williams 1197

Detection of cellulase and xylanase activity in isoelectric-focused gels using agar substrate gels supported on plastic film
C.R. MacKenzie and R.E. Williams 1522

Wilson, C.A.
Some properties of the endo-(1→4)-β-D-glucanase synthesized by the anaerobic cellulolytic rumen bacterium *Ruminococcus albus*
Thomas M. Wood and Catriona A. Wilson 316

Wiseman, G.M.
Inhibition of anion transport in human erythrocytes by pilated *Neisseria gonorrhoeae*
G.M. Wiseman, C.F. Martin, and P.J. McNicol 52

Wöhrer, W.
Xylose metabolism in *Pachysolen tannophilus:* purification and properties of xylose reductase
Günther Ditzelmüller, Christian P. Kubicek, Wilfried Wöhrer, and Max Röhr 1330

Wong, G.H.W.
Oxygen toxicity in *Treponema pallidum*: deoxyribonucleic acid single-stranded breakage induced by low doses of hydrogen peroxide
Bret M. Steiner, Grace H.W. Wong, Pramod Sutrave, and Stephen Graves 1467

Wong, P.P.
Binding between pole bean (*Phaseolus vulgaris* L.) lectin and rhizobia that do or do not nodulate the pole bean
Peter P. Wong and S. Shantharam 1349

Wood, T.M.
Some properties of the endo-(1→4)-β-D-glucanase synthesized by the anaerobic cellulolytic rumen bacterium *Ruminococcus albus*
Thomas M. Wood and Catriona A. Wilson 316

Wuest, P.J.
Phenotypic traits of fluorescent pseudomonads causing bacterial blotch of *Agaricus bisporus* mushrooms and other mushroom-derived fluorescent pseudomonads
P.A. Zarkower, P.J. Wuest, D.J. Royse, and B. Myers 360

Wunderlich, A.C.
Specific cross-protective antigonococcal immunity in the murine genital tract
L.B. Corbeil, A.C. Wunderlich, J.M. Lyons, and A.I. Braude 482

Yaphe, W.
Purification and properties of ι-carrageenase from a marine bacterium
C.W. Greer and W. Yaphe 1500

Yokose, K.
Microbial resolution of DL-*N*-benzyloxycarbonyl-*p*-hydroxyphenylglycine by *Streptomyces zaomyceticus*
Y. Suhara, Sayuri Itoh, Kazuteru Yokose, Rieko Ninomiya, Kimihiro Watanabe, and Hiromi B. Maruyama 1301

Yoshida, K.
Effects of fibronectin on the compact colony formation in staphylococci
Yukio Usui, Yukio Ohshima, and Kosaku Yoshida 419

Zambonelli, C.
Flocculation of wine yeasts: frequency, differences, and stability of the character
Giovanna Suzzi, Patrizia Romano, and Carlo Zambonelli 36

Zarkower, P.A.
Phenotypic traits of fluorescent pseudomonads causing bacterial blotch of *Agaricus bisporus* mushrooms and other mushroom-derived fluorescent pseudomonads
P.A. Zarkower, P.J. Wuest, D.J. Royse, and B. Myers 360

Zeikus, J.G.
Ecology of aerobic hydrogen-oxidizing bacteria in two freshwater lake ecosystems
Bernhard Schink and J.G. Zeikus 260

Zhazikov, I.Z.
Pseudomonas bacteriophage ϕKZ contains an inner body in its capsid
V.N. Krylov, T.A. Smirnova, I.B. Minenkova, T.G. Plotnikova, I.Z. Zhazikov, and E.A. Khrenova 758

Ziegle, J.S.
A method for assessing the root-colonizing capacity of bacteria on maize
F.M. Scher, J.S. Ziegle, and J.W. Kloepper 151

Ziomek, E.
Immunological and enzymatic properties of the *Desulfovibrio desulfuricans* hydrogenase
E. Ziomek, W.G. Martin, and R.E. Williams 1197

Zipperle, G.F., Jr.
Glucosamine substitution and muramidase susceptibility in *Bacillus anthracis*
Gene F. Zipperle, Jr., John W. Ezzell, Jr., and Ronald J. Doyle 553

Zlattner, L.
Fungi of a Long Island oak–birch forest. III. Distribution and survival of ascospores in the A horizon
Lois Zlattner and S.E. Gochenaur 389

Zucca, J.
Analyse ultrastructurale et biochimique de mutants pléiotropes de *Bacillus subtilis* affectés dans le contrôle de la sporulation
Joseph Zucca et Serge Renaudin 1367

CANADIAN JOURNAL OF MICROBIOLOGY/ JOURNAL CANADIEN DE MICROBIOLOGIE VOLUME 30 (1984) SUBJECT INDEX/INDEX DES MATIÈRES

Acephate Chromobacterium growth nutrient uptake 375
Acetate oleate propionate Propionibacterium Staphylococcus 647
Acetylene Nitrosomonas nitrous oxide pH 1397
Acetylglucosamine Saccharomycopsis dimorphism 605
Acholeplasma protoplast fusion transformation recombination 40
Achronopeptidase plasmid Frankia protoplast formation 1292
Acid phosphatase polyphosphate body Nostoc 8
Acidification lake sediment sulfate redn 1408
Actinobacillus swine metab taxonomy 1229
Actinomyces magnesium growth initiation 824
Activated sludge process bulking Geotrichum 966
Aculeacin A Candida 857
Adenosylmethionine polyphosphate globule yeast 236
Adenovirus 4 temp sensitive mutant 135
Adhesion Thiobacillus glycocalyx sulfur 81
Aeromonas proteinase 1190
Aeromonas virulence fish 900
Aflatoxin mutant Aspergillus 68
Agaricus nematode compost 503
Agrobacterium adsorption potato 1030
Agrobacterium bacteriophage virulence 676
Air pollution sulfur dioxide microorganism 179
Albumin liposome metab Dicytostelium development 1216
Alc sporulation inhibition Bacillus mutant 1337
Alk phosphatase distribution Bacillus 113
Alkaloid ergot formation Aspergillus 247
Alkane biodegrdn marine fungus yeast 565
Alkylating agent spheroplast formation Schwanniomyces 368
Amidohydrolase Streptomyces 1301
Amino acid Armillaria rhizomorph exudate 1247
Amino acid Arthrobotrys trap formation 265
Amino acid lipoprotein formation Escherichia 1239
Amino acid Staphylococcus heat resistance 1105
Ammonia oxidn bacteria soil 1125
Ammonia spore germination Cochliobolus Fusarium 1038
Ammonium Azospirillum enzyme 1222
Ammonium Nitrosococcus Nitrosomonas carbon monoxide metab 894
Ammonium oxidizer metab nitrification inhibitor 1276
Ammonium Streptomyces chloramphenicol nitrate 798
Amylase alpha Thermoactinomyces 780
Amylase Bacillus levansucrase 1367
Amylase fermn Pseudomonas dialysis 952
Amylase Schwanniomyces 1163
Anaerobe death oxygen media 228
Angiosperm nitrogenase microaerophilic bacteria 955
Anion transport erythrocyte pilated gonococcus 52
Antibiotic Eubacterium 251
Antibiotic resistant phage bacteria nonlysogenic lysogen 74
Antibody monoclonal Citrobacter O antigen 91
Antibody neutrophil mouse Samonella 1264
Antigen O Citrobacter monoclonal antibody 91
Antigen oral bacteria microscopy 1008
Antigen Rhizobium 1093
Antigen species specific lateral flagella 1525
Antigen T nucleoprotein complex SV40 virus 622
Antigen Vibrio fish pathogen 703
Antigen Vibrio fish pathogen correction 1195
Antiphagocytic factor formation Streptococcus nutrition 406
Antiserum Bacteroides glycocalyces morphol 809
Aquatic system Salmonella 334
Armillaria rhizomorph exudate compn 1247
Arthrobotrys lectin Saccharomyces binding 1437
Arthrobotrys nutrition nematode trap formation 265
Arthroconidiation Trichophyton 1415
Ascospore germination Saccharomyces protein formation 345
Aspergillus aflatoxin mutant 68
Aspergillus fumigaclavine A formation 247
Aspergillus pyruvate kinase glycolysis regulation 16
Auxotrophic mutant Candida pathogen 31
Auxotrophy Rhizobium Tn5 insertion 507
Azospirillum bacteriophage induction 805
Azospirillum catalase peroxidase superoxide dismutase 1222
Azospirillum fructose metab nitrogen fixation correction 867
Azotobacter hydrogen metab ubiquinone 8 1421
Azygospore wall protein chitin Conidiobolus 1507
Bacillus alk phosphatase distribution 113
Bacillus bacteriophage 691
Bacillus cell wall glucosamine substitution 553
Bacillus cellulase 774
Bacillus crs mutant sporulation inhibition 1337
Bacillus lectin grouping 1100
Bacillus mutation crsE1 operon rpoBC 423
Bacillus spore germination glucose 997
Bacillus spore membrane heat 854
Bacillus sporulation gene sco mutation 1367
Bacteria ammonia nitrite oxidn soil 1125
Bacteria carbaryl carbofuran metab 1458
Bacteria chemolithotroph carbon monoxide oxidn 894
Bacteria colonization river 511
Bacteria forest soil sulfur dioxide 179
Bacteria halophilic salinity 1279
Bacteria hydrogen oxidizing ecol lake 260
Bacteria infection microflora diabetes 186
Bacteria infection penicillin beta lactamase 98
Bacteria maize root colonizing 151
Bacteria marine denitrification nitrification oxygen 1073
Bacteria marine iota carrageenase 1500
Bacteria methanogenic intracytoplasmic membrane 594
Bacteria methanogenic ribosome protein acidity 663
Bacteria microaerophilic angiosperm nitrogenase 955
Bacteria nonlysogenic lysogen antibiotic resistant phage 74
Bacteria oral antigen microscopy 1008
Bacteria phototrophic water lagoon 273
Bacteria skin inhibition acetate oleate propionate 647
Bacteria soil growth initiation factor 824
Bacteria susceptibility dihydroxybenzoquinone 1068
Bacterial blotch mushroom fluorescent pseudomonad 360
Bactericide dihydroxybenzoquinone 1068
Bacteriocin membrane binding Bacteroides 268
Bacteriophage Agrobacterium virulence 676
Bacteriophage Bacillus 691
Bacteriophage induction Azospirillum 805
Bacteriophage Pasteurella morphol 1141
Bacteriophage Pseudomonas capsid 758
Bacteriophage Sesbania 521
Bacteriuria laser nephelometer 927
Bacteroides antiserum glycocalyces morphol 809
Bacteroides bacteriocin membrane binding 268
Bacteroides beta lactamase penicillin infection 98

Bacteroides black pigment PZ peptidase 1305
Bacteroides cellulase multiple form 930
Bacteroides oral asaccharolytic enzyme taxonomy 1133
Bacteroides protein polyacrylamide gel electrophoresis 863
BALSAC NRG185 competition Rhizobium ELISA 1187
Basidiocarp formation Coprinus phosphoglucose isomerase 45
Basidiomycete yeast rRNA 25S homol 613
Bdellovibrios distribution estuary 971
Bean lectin binding Rhizobium nodulation 1349
Beef ext enterovirus isolation 1253
Benzalkonium chloride Mycobacterium isolation 1112
Benzyloxycarbonylhydroxyphenylglycine resoln Streptomyces 1301
Beta lactamase bacteria infection penicillin 98
Betaine Paracoccus growth 837
Biodegrdn petroleum marine fungus yeast 565
Birch oak forest fungus ascospore distribution 389
Blotch mushroom fluorescent pseudomonad bacterial 360
Botrytis mycostasis ammonia 1038
Botrytis sclerotia histochem 171
Brevibacterium protein phenylalanine tyrosine transport 430
Buccal epithelial cell ultrastructure Candida 1001
Bulking activated sludge process Geotrichum 966
Butyrobetaine osmoregulation Klebsiella 299
Campylobacter catalase DNA homol 938
Campylobacter flagella basal complex 322
Campylobacter lake pollution 845
Campylobacterer flagella basal complex correction 1092
Candida aculeacin A papulacandin B 857
Candida auxotrophic mutant pathogen 31
Candida binding fibronectin human 221
Candida buccal vaginal epithelial cell ultrastructure 1001
Candida cell division yeast 192
Candida tropicalis hemicellulose hydrolyzate fermn 682
Capsule Staphylococcus colony morphol fibronectin 419
Carbaryl metab soil bacteria 1458
Carbofuran metab soil bacteria 1458
Carbon monoxide oxidn bacteria chemolithotroph 894
Carbon monoxide oxidn Nitrosomonas inhibitor 1276
Carbon nutrition Saccharomycopsis dimorphism 605
Carboxylase pyruvate Thiobacillus 532
Carboxymethylcellulase Bacteroides 930
Carrageenan immobilized cell protein detn 475
Carrageenase iota marine bacteria 1500
Catabolite repression Trichoderma glucosidase beta 1377
Catalase Azospirillum 1222
Catalase Campylobacter DNA homol 938
Cation polyphosphate globule yeast vacuole 236
cDNA rRNA 25S hybridization evolution correction 719
Cell division yeast Candida 192
Cell envelope flagella Campylobacter Vibrio 322
Cell envelope lipid Pseudomonas polymyxin 869
Cell immobilized carrageenan protein detn 475
Cell membrane Micrococcus 1357
Cell wall Bacillus glucosamine substitution 553
Cell wall Candida aculeacin papulacandin 857
Cell wall Didymium microcyst 162
Cell wall glucan Conidiobolus 1507
Cell wall pseudomurein Methanobacterium 1477
Cell wall sporangium protein Synchytrium 1295
Cell wall sporulation Trichophyton 1415
Cellulase Bacillus soil 774
Cellulase multiple form Bacteroides 930
Cellulase Ruminococcus endo beta glucanase 316
Cellulase xylanase detection gel isoelec focusing 1522
Cellulose degrdn Ruminococcus 316
Cerulenin sporulation inhibition Bacillus mutant 1337
Chitin azygospore wall Conidiobolus 1507
Chitin glucan Botrytis 171
Chlamydospore formation Trichoderma substrate 1
Chloramphenicol Streptomyces nitrate ammonium 798
Chlorate resistance Escherichia 1448
Chlorobium water lagoon 273
Chromatium water lagoon 273
Chromobacterium growth nutrient uptake acephate 375
Citrate cycle Pseudomonas membrane enzyme 396
Citrobacter O antigen monoclonal antibody 91
Cloning shuttle vector Escherichia Streptomyces 515
Clostridium lignocellulose fermn ethanol 212
Clostridium sulfite redn isotope fractionation 841
Clostridium toxin interaction L cell 874
Cochliobolus spore germination ammonia 1038
Conidia germination Erynia fatty acid 158
Conidiation nitrogen nutrition Neurospora 1210
Conidiobolus cell wall glucan 1507
Conjugation Escherichia Salmonella UMP kinase 991
Coprinus phosphoglucose isomerase basidiocarp formation 45
Correction flagella basal complex Campylobacterer Vibrio 1092
Correction fructose metab Azospirillum nitrogen fixation 867
Correction nitrogen fixation detn 519
Correction Pseudomonas stainless steel 719
Correction rRNA 25S cDNA hybridization evolution 719
Correction Vibrio antigen fish pathogen 1195
Correction virus enteric sewage 272
Cortexolone hydroxylation fungi protoplast 57
Corynebacteria JK 1052
Crucibulum lignocellulose degrdn 632
Cunninghamella protoplast steroid hydroxylation 57
Cuticle fatty acid fly Erynia 158
Cyathus lignocellulose degrdn 632
Cytochrome Haemophilus 763
Defective interfering particle poliovirus protein 461
Dehydrogenase fucose induction repression Pullularia 753
Dehydrogenase ketoglutarate Streptomyces 1014
Denitrification bacteria marine oxygen 1073
Deoxyarabinohexose homopolymer monoclonal antibody 91
Desiccation temp cowpea rhizobia 820
Desulfovibrio hydrogenase immunol enzymic property 1197
Detergent resistance Enterobacteriaceae 711
Development adenovirus 4 mutant 135
Development Dicytostelium liposome albumin metab 1216
Diabetes infection bacteria microflora 186
Diabetes streptozotocin opportunistic infection 1344
Dialysis Pseudomonas amylase fermn 952
Dicytostelium development liposome albumin metab 1216
Didymium microcyst cell wall 162
Dihydrolinalyl acetate metab Pseudomonas 637
Dihydroxybenzoquinone bactericide 1068
Dismutase superoxide Azospirillum 1222
DNA base Methanothrix 1383
DNA breakage Treponema hydrogen peroxide 1467
DNA homol catalase Campylobacter 938
DNA hybridization model Pseudomonas taxonomy 306
DNA Methanobacterium taxonomy 1477
DNA polymerase mutation herpes virus 560
DNA unique homol mushroom 587
Drug resistance polymyxin Pseudomonas 869
Dye susceptibility Bacteroides 1133
Echinomycin analog Streptomyces 439
Echinomycin deriv Streptomyces 730
Echinomycin formation Streptomyces protoplast 721
Ecol hydrogen oxidizing bacteria lake 260
Ecol Legionellaceae 63
EDDHA iron Fusarium Pseudomonas 1271
EDTA iron Fusarium Pseudomonas 1271
Elastase Pseudomonas IgG degrdn 1118
Electron transport Paracoccus ubiquinone 572
Electrophoresis polyacrylamide gel protein Bacteroides 863
ELISA Rhizobium BALSAC NRG185 competition 1187
Embden Meyerhof pathway Treponema 526
Endo mannanase Volvariella 657
Endoglucanase multiple form Bacteroides 930
Enteric virus sewage correction 272
Enterobacter transport membrane potential SDS 699
Enterobacteriaceae detergent resistance 711

Enterotoxigenic Escherichia morphol 451
Enterovirus isolation beef ext 1253
Entomophaga protoplast growth temp osmolality 1315
Enzyme Armillaria rhizomorph exudate 1247
Enzyme Azospirillum ammonium nitrogen fixation 1222
Enzyme Bacteroides oral asaccharolytic taxonomy 1133
Enzyme glucose metab Treponema 526
Enzyme II phosphotransferase Streptococcus transport 495
Enzyme Pseudomonas membrane citrate cycle 396
Enzyme Rhizopus Mocur extracellular 126
Epithelial cell pathol Vibrio human 381
Ergot alkaloid formation Aspergillus 247
Erynia germination fatty acid Fannia 158
Erythrocyte anion transport pilated gonococcus 52
Escherichia chlorate nitrofurantoin streptomycin resistance 1448
Escherichia enterotoxigenic morphol 451
Escherichia gene pyrH Salmonella merodiploid 991
Escherichia lactose metab glucose galactose transport 411
Escherichia linamarin hydrolysis 1530
Escherichia peptidoglycan metal binding 204
Escherichia phage P1 receptor 830
Escherichia protein freeze thaw resistance 339
Escherichia relA mutant peptidoglycan formation 1239
Escherichia Streptomyces sulfonamide resistance plasmid 515
Escherichia tricarboxylate transport protein 916
Estuary bdellovibrios distribution 971
Ethanol fermn lignocellulose Clostridium 212
Ethanol fuel hemicellulose hydrolyzate fermn 682
Eubacterium Neisseria inhibitor 251
Evolution rRNA 25S cDNA hybridization correction 719
Evolution rRNA 25S yeast taxonomy 613
Exoglucanase Streptomyces 1171
Fannia fatty acid germination Erynia 158
Fatty acid Fannia germination Erynia 158
Fatty acid Vibrio salt 669
Fermn hemicellulose hydrolyzate yeast 682
Fever Q seroepidemiol 129
Fibronectin human binding Candida 221
Fibronectin Staphylococcus colony morphol capsule 419
Fish Aeromonas virulence 900
Fish pathogen Vibrio antigen 703
Fish pathogen Vibrio antigen correction 1195
Flagella basal complex Campylobacter Vibrio 322
Flagella basal complex Campylobacterer Vibrio correction 1092
Flagella lateral antigen species specific 1525
Flocculation entero virus beef ext 1253
Flocculation yeast wine 36
Fluorescent pseudomonad bacterial blotch mushroom 360
Fluorocortexolone acetonide hydroxylation fungi protoplast 57
Fluorophenylalanine Neisseria inhibition 1319
Fly fatty acid cuticle Erynia 158
Food Staphylococcus enumeration 470
Forest oak birch fungus ascospore distribution 389
Forest soil compn. Fusarium microorganism 142
Forest soil microorganism sulfur dioxide 179
Frankia plasmid protoplast formation achronopeptidase 1292
Frankia trehalose glycogen nitrogen carbon 746
Freeze thaw resistance protein Escherichia 339
Fructofuranosidase beta Pseudomonas 1326
Fructose diphosphate pyruvate kinase Aspergillus 16
Fructose metab Azospirillum nitrogen fixation correction 867
Fucose dehydrogenase induction repression Pullularia 753
Fuel ethanol hemicellulose hydrolyzate fermn 682
Fumigaclavine A formation Aspergillus 247
Fumigant metham Trichoderma 739
Fungal pond microlayer 578
Fungi forest soil sulfur dioxide 179
Fungi nematode trapping lectin 1437
Fungi nematode trapping trap formation 265
Fungicide resistance Tolaromyces genetics 1079
Fungus cell immobilized protein detn 475
Fungus marine biodegrdn petroleum 565
Fungus oak birch forest ascospore distribution 389
Fungus white rot antagonist 884
Fusarium forest soil compn. microorganism 142
Fusarium phytotoxin virulence 1494
Fusarium Pseudomonas iron EDTA EDDHA 1271
Fusarium spore germination ammonia 1038
Galactose glucose transport lactose metab Escherichia 411
Gastrointestinal tract germ-free technol lactobacillus 849
Gel cellulase xylanase detection isoelec focusing 1522
Geldanamycin Streptomyces antagonism Rhizoctonia 1440
Gene afl mapping Aspergillus 68
Gene MEL Streptomyces tyrosinase 1058
Gene phage resistance Streptococcus transduction 1309
Gene pyrH Escherichia Salmonella merodiploid 991
Gene sco mutation Bacillus sporulation 1367
Gene thymidine kinase mutation reversion herpes 560
Genetics fungicide resistance Tolaromyces 1079
Genital tract gonococci immunity 482
Geotrichum activated sludge process bulking 966
Germination Erynia fatty acid Fannia 158
Germination spore Bacillus isoleucine 854
Germ-free technol lactobacillus gastrointestinal tract 849
Gigaspora sporulation tomato 642
Glucan Botrytis 171
Glucan cell wall Conidiobolus 1507
Glucanase endo beta Ruminococcus 316
Glucoamylase Schwanniomyces 1163
Glucosamine substitution cell wall Bacillus 553
Glucose galactose transport lactose metab Escherichia 411
Glucose metab Streptomyces nitrogen limitation 1014
Glucose metab Treponema enzyme 526
Glucose spore germination Bacillus 997
Glucosidase beta Trichoderma catabolite repression 1377
Glutamine synthetase Mycobacterium 353
Glycocalyces antiserum Bacteroides morphol 809
Glycocalyx Thiobacillus adhesion sulfur 81
Glycogen Frankia nitrogen fixation 746
Glycogen lipid polyphosphate protein Botrytis 171
Glycolipid Staphylococcus salt lipid 1424
Glycolysis regulation pyruvate kinase Aspergillus 16
Glycolysis Treponema 526
Glycoprotein Mortierella Piptocephalis parasite 290
Gnotobiol lactobacillus 849
Gonococci immunity genital tract 482
Gonococcus pilated anion transport erythrocyte 52
Growth Chromobacterium acephate 375
Growth Paracoccus betaine methionine thiamin 837
Haemophilus cytochrome 763
Haemophilus lipopolysaccharide compn 1184
Haemophilus swine metab taxonomy 1229
Halophilic bacteria salinity 1279
Hantaan virus hemorrhagic fever serol 1137
Heat adaptation Staphylococcus sodium chloride 1424
Heat membrane Bacillus spore 854
Heat resistance Staphylococcus sodium chloride 1105
Hemicellulose hydrolyzate fermn yeast 682
Hemorrhagic fever renal syndrome Hantaan virus 1137
Herpes simplex virus phosphonoacetate resistance 560
Hexosamine Didymium microcyst wall 162
Hydrogen metab Azotobacter ubiquinone 8 1421
Hydrogen oxidizing bacteria ecol lake 260
Hydrogen peroxide Treponema oxygen toxicity 1467
Hydrogenase Azotobacter ubiquinone 1421
Hydrogenase Desulfovibrio immunol enzymic property 1197
Hydrolyzate hemicellulose fermn yeast 682
Hydroxyisovalerate Proteus iron metab 1046
Hydroxylation steroid protoplast Cunninghamella Hypho= derma 57
Hyphal interaction mycoparasite soil fungi 1482
Hyphoderma protoplast steroid hydroxylation 57
IgG degrdn Pseudomonas elastase 1118
Immobilized cell carrageenan protein detn 475
Immunity gonococci genital tract 482

Infection bacteria microflora diabetes 186
Infection bacteria penicillin beta lactamase 98
Infection Macrophomina rhizobitoxine soybean root 285
Infection opportunistic streptozotocin diabetes 1344
Invertase Pseudomonas 1326
Iron EDTA EDDHA Fusarium Pseudomonas 1271
Iron metab Proteus siderophore formation 1046
Isoelec focusing cellulase xylanase detection gel 1522
Isoleucine spore germination Bacillus 854
Isotope fractionation sulfur sulfite redn 841
JK corynebacteria 1052
Ketoglutarate excretion Streptomyces 1014
Kinase pyruvate Aspergillus glycolysis regulation 16
Kinase thymidine gene mutation reversion herpes 560
Kinase UMP Escherichia conjugation Salmonella 991
Klebsiella osmoregulation nitrogen fixation 299
Klebsiella phage P1 receptor 830
Kluyveromyces protoplast fusion 540
L cell Clostridium toxin interaction 874
Lactamase beta bacteria infection penicillin 98
Lactobacillus gastrointestinal tract germ-free technol 849
Lactose metab Escherichia glucose galactose transport 411
Lagoon water phototrophic bacteria 273
Lake hydrogen oxidizing bacteria ecol 260
Lake pollution Campylobacter waterfowl 845
Lake sediment acidification sulfate redn 1408
Laser nephelometer bacteriuria 927
Lateral flagella antigen species specific 1525
Lectin binding Rhizobium bean nodulation 1349
Lectin grouping Bacillus 1100
Lectin nematode trapping fungi 1437
Legionellaceae ecol 63
Levansucrase Bacillus 1367
Lignocellulose degrdn Crucibulum Cyathus Nidula 632
Lignocellulose fermn ethanol Clostridium 212
Linamarin hydrolysis Escherichia Streptococcus 1530
Lipid Botrytis 171
Lipid Pseudomonas cell envelope polymyxin 869
Lipid Staphylococcus salt 1424
Lipid Vibrio sodium chloride 669
Lipopolysaccharide compn Haemophilus 1184
Lipopolysaccharide Neisseria sulfite 1297
Lipopolysaccharide Vibrio antigen 703
Lipoprotein formation Escherichia amino acid 1239
Liposome albumin metab Dicytostelium development 1216
Lysogen bacteria nonlysogenic antibiotic resistant phage 74
Lysozyme Streptococcus lysis 905
Macrophomina infection rhizobitoxine soybean root 285
Magnesium Actinomyces growth initiation 824
Maize bacteria root colonizing 151
Mannanase Volvariella 657
Maple silver lignocellulose degrdn 632
Mapping gene afl Aspergillus 68
Marine bacteria iota carrageenase 1500
Marine fungus yeast petroleum biodegrdn 565
Medicago Rhizobium 1179
Membrane Bacillus spore heat 854
Membrane Bacteroides binding bacteriocin 268
Membrane cell outer Micrococcus 1357
Membrane enzyme Pseudomonas citrate cycle 396
Membrane intracytoplasmic methanogen methane formation 594
Membrane outer protein tricarboxylate transport 916
Membrane potential Enterobacter transport SDS 699
Meningococcal infection mucosal invasiveness neonate 1022
Meningococci serotype distribution 1289
Meningococcus virulence neonate 1042
Mercury methylation microorganism lake acidification 1408
Metal binding peptidoglycan Escherichia 204
Metham fumigant Trichoderma 739
Methane formation methanogen intracytoplasmic membrane 594
Methane formation Methanothrix metab taxonomy 1383
Methane oxidn Nitrosomonas nitrification inhibitor 1276
Methane wastewater industrial review 975
Methanobacterium cell wall pseudomurein 1477
Methanobacterium intracytoplasmic membrane 594
Methanogen intracytoplasmic membrane methane formation 594
Methanospirillum intracytoplasmic membrane 594
Methanothrix methane formation metab taxonomy 1383
Methicillin resistance Staphylococcus detection 488
Methionine Paracoccus growth 837
Methylation mercury microorganism lake acidification 1408
Microaerophilic bacteria nitrogenase angiosperm 955
Micrococcus membrane cell outer 1357
Microcyst cell wall Didymium 162
Microflora bacteria infection diabetes 186
Microlayer pond fungal 578
Microorganism forest soil compn. Fusarium 142
Microorganism oil field effluent 786
Microorganism soil nematode trapping fungi 1437
Mocur Rhizopus extracellular enzyme 126
Mold detn food trypan blue 1405
Monacrosporium lectin Saccharomyces binding 1437
Monoclonal antibody Citrobacter O antigen 91
Morphol antiserum Bacteroides glycocalyces 809
Morphol enterotoxigenic Escherichia 451
Morphol Pasteurella bacteriophage 1141
Mortierella glycoprotein Piptocephalis parasite 290
Mouse antibody neutrophil Samonella 1264
Mucosal invasiveness meningococcal infection neonate 1022
Muramidase susceptibility Bacillus cell wall 553
Mushroom DNA unique homol 587
Mutant auxotrophic Candida pathogen 31
Mutation chlHW Escherichia 1448
Mutation crsE1 Bacillus operon rpoBC 423
Mutation gene sco Bacillus sporulation 1367
Mutation thymidine kinase gene reversion herpes 560
Mutation transposon Tn5 Rhizobium auxotrophy 507
Mycobacterium glutamine synthetase 353
Mycobacterium isolation soil decontamination 1112
Mycoflora skin 1205
NADH oxidase Azotobacter ubiquinone 1421
NADH oxidn Paracoccus respiration 572
Neisseria inhibition phenylalanine fluorophenylalanine 1319
Neisseria inhibitor Eubacterium 251
Neisseria sulfur nutrition metab 1453
Neisseria surface pyruvate sulfite 1297
Nematode compost Agaricus 503
Nematode trapping fungi lectin 1437
Nematode trapping fungi trap formation 265
Neonate meningococcus virulence 1042
Nephelometer laser bacteriuria 927
Neurospora conidiation nitrogen nutrition 1210
Neutrophil antibody mouse Samonella 1264
Newborn tissue culture rubella 961
Nidula lignocellulose degrdn 632
Nitrate reductase Rhizobium free living 890
Nitrate Streptomyces chloramphenicol ammonium 798
Nitrification bacteria marine oxygen 1073
Nitrification inhibitor ammonium oxidizer metab 1276
Nitrite oxidn bacteria soil 1125
Nitrofurantoin resistance Escherichia 1448
Nitrogen fixation Azospirillum enzyme 1222
Nitrogen fixation detn correction 519
Nitrogen fixation fructose metab Azospirillum correction 867
Nitrogen fixation osmoregulation Klebsiella 299
Nitrogen limitation Streptomyces glucose metab 1014
Nitrogen nutrition conidiation Neurospora 1210
Nitrogenase microaerophilic bacteria angiosperm 955
Nitrosococcus carbon monoxide metab ammonium 894
Nitrosococcus metab nitrification inhibitor 1276
Nitrosomonas carbon monoxide metab ammonium 894
Nitrosomonas metab nitrification inhibitor 1276

Nitrosomonas nitrous oxide formation oxygen 1397
Nitrospira soil acid forest 1125
Nitrous oxide formation marine sediment 1073
Nitrous oxide formation Nitrosomonas oxygen 1397
Nocardia soil 1088
Nodulation Rhizobium bean lectin binding 1349
Nodulation root soybean penicillin sensitivity 77
Nostoc polyphosphate body acid phosphatase 8
Nuclear division temp yeast 793
Nucleoprotein complex T antigen SV40 virus 622
Nutrient uptake Chromobacterium acephate 375
Nutrition Arthrobotrys nematode trap formation 265
Nutrition carbon Saccharomycopsis dimorphism 605
Nutrition Methanobacterium taxonomy 1477
Nutrition Rhizobium auxotrophy Tn5 insertion 507
Nutrition Streptococcus antiphagocytic factor formation 406
Nutrition sulfur Neisseria 1453
O antigen Citrobacter monoclonal antibody 91
Oak birch forest fungus ascospore distribution 389
Oil field effluent microorganism 786
Oleate Propionibacterium Staphylococcus 647
Operon rpoBC Bacillus mutation crsE1 423
Opportunistic infection streptozotocin diabetes 1344
Osmolality Entomophaga protoplast growth 1315
Osmoregulation Klebsiella nitrogen fixation 299
Oxidase NADH Azotobacter ubiquinone 1421
Oxygen anaerobe death media 228
Oxygen marine bacteria denitrification nitrification 1073
Oxygen Nitrosomonas nitrous oxide formation 1397
Oxygen toxicity Treponema hydrogen peroxide 1467
Pachysolen xylose reductase 1330
Paecilomyces parasexual cycle 922
Papulacandin B Candida 857
Paracoccus growth betaine methionine thiamin 837
Paracoccus NADH succinate oxidn respiration 572
Parasexual cycle Paecilomyces 922
Parasite Piptocephalis Mortierella glycoprotein 290
Pasteurella bacteriophage morphol 1141
Pathogen Candida auxotrophic mutant 31
Pathol Vibrio human epithelial cell 381
Pea root rot Rhizoctonia 1440
Peat temp Rhizobium 23
Penicillin bacteria infection beta lactamase 98
Penicillin sensitivity root nodulation soybean 77
Penicillium polysaccharide acidic extracellular 1157
Peptidase PZ Bacteroides black pigment 1305
Peptide Arthrobotrys trap formation 265
Peptidoglycan formation Escherichia relA mutant 1239
Peptidoglycan metal binding Escherichia 204
Peromyscus Rocky Mountain spotted fever 491
Peroxidase Azospirillum 1222
Peroxide hydrogen Treponema oxygen toxicity 1467
Petroleum biodegrdn marine fungus yeast 565
Phage antibiotic resistant bacteria nonlysogenic lysogen 74
Phage P1 receptor Escherichia Klebsiella 830
Phage resistance gene Streptococcus transduction 1309
Phagocytosis Streptococcus group E nutrition 406
Phenylalanine Neisseria inhibition 1319
Phenylalanine tyrosine transport protein Brevibacterium 430
Phosphatase alk distribution Bacillus 113
Phosphatase polyphosphate body Nostoc 8
Phosphoenolpyruvate glucose phosphotransferase Streptococcus oral 495
Phosphoglucose isomerase Coprinus basidiocarp formation 45
Phospholipid fatty acid Vibrio salt 669
Phospholipid protein Micrococcus membrane 1357
Phospholipid Staphylococcus sodium chloride 1424
Phosphonoacetate resistance herpes simplex virus 560
Phosphorylation sugar enzyme II Streptococcus 495
Phosphotransferase phosphoenolpyruvate glucose Streptococcus oral 495
Phototrophic bacteria water lagoon 273
Phytotoxin Fusarium virulence 1494
Picoplanktonic procaryote spinae 716
Pigment black Bacteroides PZ peptidase 1305
Pilated gonococcus anion transport erythrocyte 52
Piptocephalis parasite Mortierella glycoprotein 290
Plasmid Frankia protoplast formation achronopeptidase 1292
Plasmid sulfonamide resistance Streptomyces Escherichia 515
Plasmid Vibrio serovar 1149
Poliovirus defective interfering particle protein 461
Pollution lake Campylobacter waterfowl 845
Pollution seawater petroleum yeast fungus 565
Pollution water oil field microorganism 786
Polyacrylamide gel electrophoresis protein Bacteroides 863
Polymerase DNA mutation herpes virus 560
Polymerase RNA Bacillus sporulation catabolite 423
Polymyxin Pseudomonas cell envelope lipid 869
Polyphosphate body Nostoc acid phosphatase 8
Polyphosphate Botrytis 171
Polyphosphate globule yeast vacuole cation 236
Polysaccharide acidic extracellular Penicillium 1157
Pond fungal microlayer 578
Potassium methanogenic bacteria 663
Potato agrobacterium adsorption 1030
Potential membrane Enterobacter transport SDS 699
Procaryote picoplanktonic spinae 716
Proline betaine osmoregulation Klebsiella 299
Propionate Propionibacterium Staphylococcus 647
Propionibacterium acetate oleate propionate 647
Protease IgG elastase 1118
Protein A Staphylococcus fibronectin 419
Protein adeno virus 4 mutant 135
Protein Armillaria rhizomorph exudate 1247
Protein azygospore wall Conidiobolus 1507
Protein Bacteroides polyacrylamide gel electrophoresis 863
Protein Botrytis 171
Protein detn immobilized cell carrageenan 475
Protein Didymium microcyst wall 162
Protein Escherichia freeze thaw resistance 339
Protein formation spore germination Saccharomyces 345
Protein phospholipid Micrococcus membrane 1357
Protein poliovirus defective interfering particle 461
Protein ribosome acidity methanogenic bacteria 663
Protein Synchytrium sporangium cell wall 1295
Protein tricarboxylate transport Escherichia 916
Proteinase Aeromonas 1190
Proteinase Verticillium 1488
Proteus siderophore formation iron metab 1046
Protoplast cortexolone hydroxylation 57
Protoplast Cunninghamella Hyphoderma steroid hydroxylation 57
Protoplast Entomophaga growth temp osmolality 1315
Protoplast formation plasmid Frankia achronopeptidase 1292
Protoplast fusion transformation Acholeplasma recombination 40
Protoplast Kluyveromyces fusion 540
Protoplast Streptomyces echinomycin formation 721
Pseudomonad fluorescent bacterial blotch mushroom 360
Pseudomonas amylase fermn dialysis 952
Pseudomonas bacteriophage capsid 758
Pseudomonas elastase IgG degrdn 1118
Pseudomonas enzyme membrane citrate cycle 396
Pseudomonas Fusarium iron EDTA EDDHA 1271
Pseudomonas invertase 1326
Pseudomonas polymyxin cell envelope lipid 869
Pseudomonas stainless steel correction 719
Pseudomonas taxonomy DNA hybridization model 306
Pseudomonas terpene mono acyclic metab 637
Pseudomonas terpineol alpha metab pathway 1429
Pseudomurein cell wall Methanobacterium 1477
Pullularia fucose dehydrogenase induction repression 753
Pyruvate carboxylase Thiobacillus 532
Pyruvate excretion Streptomyces 1014
Pyruvate kinase Aspergillus glycolysis regulation 16
Pyruvate sulfite Neisseria surface 1297

Pythium soil fungi hyphal interaction 1482
PZ peptidase Bacteroides black pigment 1305
P1 phage receptor Escherichia Klebsiella 830
Q fever seroepidemiol 129
Quinoxalinecarboxylate analog Streptomyces 439
Receptor phage P1 Escherichia Klebsiella 830
Recombination Acholeplasma protoplast fusion transformation 40
Red clover root rot Fusarium 1494
Reductase nitrate Rhizobium free living 890
Reductase xylose Pachysolen 1330
Renal syndrome hemorrhagic fever Hantaan virus 1137
Resistance freeze thaw protein Escherichia 339
Resoln benzyloxycarbonylhydroxyphenylglycine Streptomyces 1301
Respiration Paracoccus NADH succinate oxidn 572
Review methane wastewater industrial 975
Rhizobia cowpea temp desiccation 820
Rhizobitoxine soybean root Macrophomina infection 285
Rhizobium antigen 1093
Rhizobium auxotrophy Tn5 insertion 507
Rhizobium BALSAC NRG185 competition ELISA 1187
Rhizobium bean lectin binding nodulation 1349
Rhizobium free living nitrate reductase 890
Rhizobium Medicago 1179
Rhizobium peat temp 23
Rhizobium spheroplast 415
Rhizoctonia antagonism Streptomyces geldanamycin 1440
Rhizopus Mocur extracellular enzyme 126
Rhodopseudomonas water lagoon 273
Ribosome protein acidity methanogenic bacteria 663
Rickettsia Peromyscus spotted fever 491
River bacteria colonization 511
RNA polymerase sporulation Bacillus catabolite 423
Rocky Mountain spotted fever Peromyscus 491
Root colonizing bacteria maize 151
Root nodulation penicillin sensitivity soybean 77
Root rot red clover Fusarium 1494
Rotavirus potable water 653
rRNA 25S cDNA hybridization evolution correction 719
rRNA 25S homol basidiomycete yeast 613
Rubella tissue culture newborn 961
Ruminococcus cellulase 316
Saccharomyces binding lectin Arthrobotrys Monacrosporium 1437
Saccharomyces spore germination protein formation 345
Saccharomycopsis dimorphism carbon nutrition acetylglucosamine 605
Salmonella aquatic system 334
Salmonella merodiploid Escherichia gene pyrH 991
Salt glycolipid Staphylococcus 1424
Salt Vibrio phospholipid fatty acid 669
Samonella mouse antibody neutrophil 1264
Schwanniomyces glucoamylase amylase 1163
Schwanniomyces spheroplast formation alkylating agent 368
SDS Enterobacter transport membrane potential 699
Sediment lake acidification sulfate redn 1408
Sediment lake hydrogen oxidizing bacteria 260
Sediment marine nitrous oxide formation 1073
Septation Zymomonas 1283
Seroepidemiol Q fever 129
Serol Hantaan virus hemorrhagic fever 1137
Serotype meningococci distribution 1289
Sesbania bacteriophage 521
Sewage virus enteric correction 272
Shrimp Vibrio 713
Siderophore formation Proteus iron metab 1046
Silver activation alpha amylase Thermoactinomyces 780
Skin bacteria inhibition acetate oleate propionate 647
Skin Mycoflora 1205
Sodium chloride sporulation inhibition Bacillus 1337
Sodium chloride Staphylococcus heat adaptation 1424
Sodium chloride Staphylococcus heat resistance 1105
Sodium chloride Vibrio lipid 669
Sodium hydroxide Mycobacterium isolation 1112
Soil bacteria ammonia nitrite oxidn 1125
Soil bacteria growth initiation factor 824
Soil carbaryl carbofuran metab 1458
Soil compn. Fusarium microorganism forest 142
Soil Fusarium Pseudomonas iron 1271
Soil Mycobacterium isolation decontamination 1112
Soil Nocardia 1088
Soil Streptomyces antagonism Rhizoctonia 1440
Soybean penicillin sensitivity root nodulation 77
Soybean root rhizobitoxine Macrophomina infection 285
Spheroplast formation Schwanniomyces alkylating agent 368
Spheroplast Rhizobium 415
Spinae picoplanktonic procaryote 716
Sporangium Synchytrium protein cell wall 1295
Spore germination Bacillus glucose 997
Spore germination Cochliobolus Fusarium ammonia 1038
Spore germination Saccharomyces protein formation 345
Spore membrane Bacillus heat 854
Sporulation Bacillus gene sco mutation 1367
Sporulation Gigaspora tomato 642
Sporulation inhibition Bacillus crs mutant 1337
Sporulation microcycle Neurospora nitrogen deprivation 1210
Sporulation Trichophyton cell wall 1415
Spotted fever Rickettsia Peromyscus 491
Stainless steel Pseudomonas correction 719
Staphylococcus acetate oleate propionate 647
Staphylococcus colony morphol fibronectin capsule 419
Staphylococcus food enumeration 470
Staphylococcus heat resistance sodium chloride 1105
Staphylococcus methicillin resistance detection 488
Staphylococcus sodium chloride heat adaptation 1424
Steel stainless Pseudomonas correction 719
Steroid hydroxylation protoplast Cunninghamella Hypoderma 57
Streptococcus linamarin hydrolysis 1530
Streptococcus lysis lysozyme 905
Streptococcus nutrition antiphagocytic factor formation 406
Streptococcus oral phosphoenolpyruvate glucose phosphotransferase 495
Streptococcus transduction phage resistance gene 1309
Streptomyces benzyloxycarbonylhydroxyphenylglycine resoln 1301
Streptomyces chloramphenicol nitrate ammonium 798
Streptomyces echinomycin analog 439
Streptomyces echinomycin deriv 730
Streptomyces Escherichia sulfonamide resistance plasmid 515
Streptomyces excretion ketoglutarate pyruvate 1014
Streptomyces exoglucanase 1171
Streptomyces geldanamycin antagonism Rhizoctonia 1440
Streptomyces protoplast echinomycin formation 721
Streptomyces tyrosinase gene MEL 1058
Streptomycin resistance Escherichia 1448
Streptozotocin diabetes opportunistic infection 1344
Succinate oxidn Paracoccus respiration 572
Sugar Didymium microcyst wall 162
Sugar fucose dehydrogenase Pullularia 753
Sugar phosphorylation enzyme II Streptococcus 495
Sugar transport Enterobacter SDS 699
Sulfate redn lake sediment acidification 1408
Sulfate transport Neisseria 1453
Sulfhydryl compd Schwanniomyces spheroplast formation 368
Sulfite pyruvate Neisseria surface 1297
Sulfite redn Clostridium isotope fractionation 841
Sulfonamide resistance plasmid Streptomyces Escherichia 515
Sulfur adhesion Thiobacillus glycocalyx 81
Sulfur isotope fractionation sulfite redn 841
Sulfur nutrition metab Neisseria 1453
Superoxide dismutase Azospirillum 1222
Surfactant nonionic Trichoderma enumeration 1193
SV40 virus T antigen nucleoprotein complex 622

Swine Actinobacillus Haemophilus metab taxonomy 1229
Synchytrium sporangium protein cell wall 1295
Synthetase glutamine Mycobacterium 353
T antigen nucleoprotein complex SV40 virus 622
Taxonomy Actinobacillus Haemophilus swine 1229
Taxonomy Bacteroides oral asaccharolytic enzyme 1133
Taxonomy Campylobacter catalase 938
Taxonomy Methanobacterium DNA nutrition 1477
Taxonomy Methanothrix methane formation metab 1383
Taxonomy Pseudomonas DNA hybridization model 306
Taxonomy yeast 25S rRNA evolution 613
Tellurite sensitivity Escherichia Klebsiella 830
Temp desiccation cowpea rhizobia 820
Temp nuclear division yeast 793
Temp peat Rhizobium 23
Terpene mono acyclic metab Pseudomonas 637
Terpineol alpha metab pathway Pseudomonas 1429
Thermoactinomyces alpha amylase 780
Thermostability alpha amylase Thermoactinomyces 780
Thiamin Paracoccus growth 837
Thiobacillus glycocalyx adhesion sulfur 81
Thiobacillus pyruvate carboxylase 532
Thymidine kinase gene mutation reversion herpes 560
Tissue culture rubella newborn 961
Tolaromyces fungicide resistance genetics 1079
Tomato Gigaspora sporulation 642
Toxin Clostridium interaction L cell 874
Transduction phage resistance gene Streptococcus 1309
Transformation protoplast Acholeplasma recombination 40
Transport anion erythrocyte pilated gonococcus 52
Transport Enterobacter membrane potential SDS 699
Transport glucose galactose Escherichia lactose metab 411
Transport phenylalanine tyrosine protein Brevibacterium 430
Transport Streptococcus enzyme II phosphotransferase 495
Transport sulfate Neisseria 1453
Transport tricarboxylate Escherichia protein 916
Transposon Tn5 mutation Rhizobium auxotrophy 507
Trap formation nematode trapping fungi 265
Trehalose Frankia nitrogen fixation 746
Treponema glucose metab enzyme 526
Treponema hydrogen peroxide oxygen toxicity 1467
Tricarboxylate cycle enzyme Pseudomonas membrane 396
Tricarboxylate transport Escherichia protein 916
Trichoderma Chlamydospore formation substrate 1
Trichoderma enumeration nonionic surfactant 1193
Trichoderma fumigant metham 739
Trichoderma glucosidase beta catabolite repression 1377
Trichophyton sporulation cell wall 1415
Trypan blue mold detn food 1405
Tyrosinase Streptomyces gene MEL 1058
Tyrosine phenylalanine transport protein Brevibacterium 430
Ubiquinone Paracoccus electron transport 572
Ubiquinone 8 hydrogen metab Azotobacter 1421
UMP kinase Escherichia conjugation Salmonella 991
Vacuole yeast polyphosphate globule cation 236
Vaginal epithelial cell ultrastructure Candida 1001
Verticillium proteinase 1488
Vibrio antigen fish pathogen 703
Vibrio antigen fish pathogen correction 1195
Vibrio flagella basal complex 322
Vibrio flagella basal complex correction 1092
Vibrio human epithelial cell pathol 381
Vibrio lateral flagella antigen 1525
Vibrio phospholipid fatty acid salt 669
Vibrio serovar plasmid 1149
Vibrio shrimp 713
Virulence bacteriophage Agrobacterium 676
Virulence meningococcus neonate 1042
Virus adeno 4 mutant protein 135
Virus enteric sewage correction 272
Virus entero flocculation beef ext 1253
Virus herpes simplex phosphonoacetate resistance 560
Virus polio defective interfering protein 461
Virus SV40 T antigen nucleoprotein complex 622
Virus water 105
Vitamin B12 Paracoccus growth 837
Volvariella endo mannanase 657
Wall cell glucan Conidiobolus 1507
Wastewater industrial methane review 975
Water lagoon phototrophic bacteria 273
Water pollution oil field microorganism 786
Water potable Rotavirus 653
Water virus 105
Waterfowl lake pollution 845
Wheat lignocellulose degrdn fungi 632
White rot antagonist fungus 884
Wine yeast flocculation 36
Xylanase cellulase detection gel isoelec focusing 1522
Xylose reductase Pachysolen 1330
Yeast basidiomycete rRNA 25S homol 613
Yeast cell division Candida 192
Yeast detn food trypan blue 1405
Yeast glucoamylase amylase 1163
Yeast hemicellulose hydrolyzate fermn 682
Yeast marine biodegrdn petroleum 565
Yeast nuclear division temp 793
Yeast polyphosphate globule vacuole cation 236
Yeast wine flocculation 36
Zymomonas septation 1283